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# TFT-LCD MONITOR

GD15N\*/GD15A\*

## *SERVICE* Manual

### TFT-LCD MONITOR



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# 1 Precautions

Follow these safety, servicing and ESD precautions to prevent damage and to protect against potential hazards such as electrical shock.

## 1-1 Safety Precautions

### 1-1-1 Warnings

1. For continued safety, do not attempt to modify the circuit board.
2. Disconnect the AC power and DC Power Jack before servicing.

### 1-1-2 Servicing the LCD Monitor

1. When servicing the LCD Monitor Disconnect the AC line cord from the AC outlet.
2. It is essential that service technicians have an accurate voltage meter available at all times. Check the calibration of this meter periodically.

### 1-1-3 Fire and Shock Hazard

Before returning the monitor to the user, perform the following safety checks:

1. Inspect each lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the monitor.
2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor networks, mechanical insulators, etc.
3. Leakage Current Hot Check (Figure 1-1):  
**WARNING: Do not use an isolation transformer during this test.**

Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, *Leakage Current for Appliances*), and Underwriters Laboratories (UL Publication UL1410, 59.7).

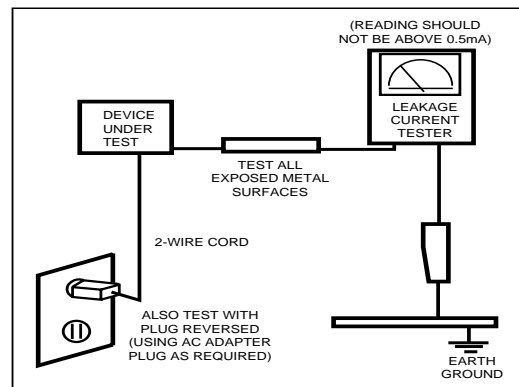


Figure 1-1. Leakage Current Test Circuit

4. With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

### 1-1-4 Product Safety Notices

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection. The protection they give may not be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by ⚠ on schematics and parts lists. A substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and / or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

## 2 Product Specifications

## 2-1 Specifications

Item	Description		
LCD Panel	TFT-LCD panel, RGB vertical stripe, normaly white, 15-Inch viewable, 0.297 mm pixel pitch		
Scanning Frequency	Horizontal : 30 kHz ~ 61 kHz (Automatic) Vertical : 56 Hz ~ 75 Hz (Automatic)		
Display Colors	16,7 Million colors		
Maximum Resolution	Horizontal : 1024 Pixels Vertical : 768 Pixels		
Input Video Signal	Analog, 0.7 Vp-p ± 5% positive at 75 Ω, internally terminated		
Input Sync Signal	Type: Seperate H/V Sync-on-Green, automatic synchronization without external switch of sync type Level: TTL level		
Maximum Pixel Clock rate	80 MHz		
Active Display Horizontal/Vertical	304.1 mm / 228.1 mm		
AC power voltage & Frequency	AC 90 ~ 264 Volts, 60/ 50 Hz ± 3 Hz		
Power Consumption	42 W (max)		
Dimensions Unit (W x D x H) Carton (W x D x H)	15.0 x 2.2 x 15.0 Inches (382 x 57 x 380 mm) 19.1 x 8.0 x 20.6 Inches (486 x 203 x 522 mm)		
Weight (Net/Gross)	4.4 kg (9.7 lbs) / 7.0 kg (15.4 lbs)		
TV System		GD15N*	GD15A*
	Tunning Color Sound	Frequency Synthesize NTSC BTSC.A2 STEREO.FM-FM	Frequency Synthesize PAL NICAM.A2 STEREO
Antena Input	75Ω Coaxial Cable		
Sound Characteristic	– MAX Internal speaker Out : Right => 1.5 W Left => 1.5 W – BASS Control Range : -12 dB ~ + 12 dB – TREBLE Control Range : -12 dB ~ + 12 dB – Line Out : -7 dBm (Fixed) – Headphone Out : RF => 5 mW (400 m Vrms) A/V => 10 mW (580 Vrms), Max Input sound : -9 dB – Output Frequency : RF => 80 Hz ~ 15 KHz (at -3 dB) A/V => 80 Hz ~ 20 KHz (at -3 dB)		
• GD15N*/GD15A* comply with SWEDAC (MPR II) recommendations for reduced electromagnetic fields. • Designs and specifications are subject to change without prior notice.			

## 3 Disassembly and Reassembly

This section of the service manual describes the disassembly and reassembly procedures for the GD15N\*/GD15A\* monitors.

**WARNING:** This monitor contains electrostatically sensitive devices. Use caution when handling these components.

### 3-1 Disassembly

- Cautions:**
1. Disconnect the monitor from the power source before disassembly.
  2. Follow these directions carefully; never use metal instruments to pry apart the cabinet.

#### 3-1-1 Removing the Stand

1. Remove 4 screws in the hinge area.
2. Pry it off the back of the monitor.
3. Disconnect Power Cord and Signal Cable.

#### 3-1-2 Main Body Disassembly

1. Remove the 4 screws on the four corner of the Rear Cover.
2. Remove Rear Cover from the Front Cover.
3. Remove 11 screws on the Shield and remove the shield.
4. Disconnect Inverter wire, Function PCB wire and Interface wire.  
Remove 4 screws on the Main PCB and remove 2 screws on the D sub shield.
5. Remove the Main PCB Assembly.
6. Remove 6 screws on the Inverter PCB Assembly and then remove it
7. Remove 6 screws on the Rear Panel Bracket.
8. Remove the Bracket Assembly from the Front Cover.
9. Remove 3 screws on the Function PCB from locking area of Function knob and remove Function PCB.
10. Remove 4 screws on the Shield of Panel.
11. Remove the Shield.
12. Remove Rear Bracket from Panel.
13. Remove 2 screws between Panel Rear and Inverter PCB.
14. Remove the Interface wire on the Rear Side of Panel.

#### 3-1-3 Standard Stand Disassembly

1. Remove 5 screws from the Stand Rear
2. Remove 4 screws from the Stand Bottom.

3. Remove Stand Front from the Stand assembly.
4. Remove 2 screws from the Stand assembly.
5. Remove the Stand Rear from the Stand assembly.
6. Remove 5 screws on the Vesa Brkt from the Stand assembly.
7. Remove cover hinge from the Stand assembly.
8. Remove Stand Base from the Stand assembly.

#### 3-1-4 Pivot Multi-media Stand Disassembly (option)

1. Stand the stand assembly with the base close to you.
2. Remove the 4 screws on the back cover of the stand and remove it.
3. Stand the stand assembly upside down.
4. Remove the 4 screws.
5. Disconnect CN805, CN806, CN807, CN808, CN809, CN812 and F1.
6. Remove the Back Cover of the Stand Front assembly.
7. Remove 4 screws on the external adaptor and remove the adaptor.
8. Remove 2 screws between hinge and Stand Body.
9. Remove the hinge
10. Remove 2 screws on Audio main PCB and remove it
11. Remove 2 screws on the Audio Function PCB and remove it.

#### 3-1-5 Angle Pivot Stand Disassembly (option)

1. Remove the cap pivot from the stand assembly.
2. Remove the 4 screws on the hinge assembly.
3. Remove the 4 screws on the Stand Rear

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## 4 Alignments and Adjustments

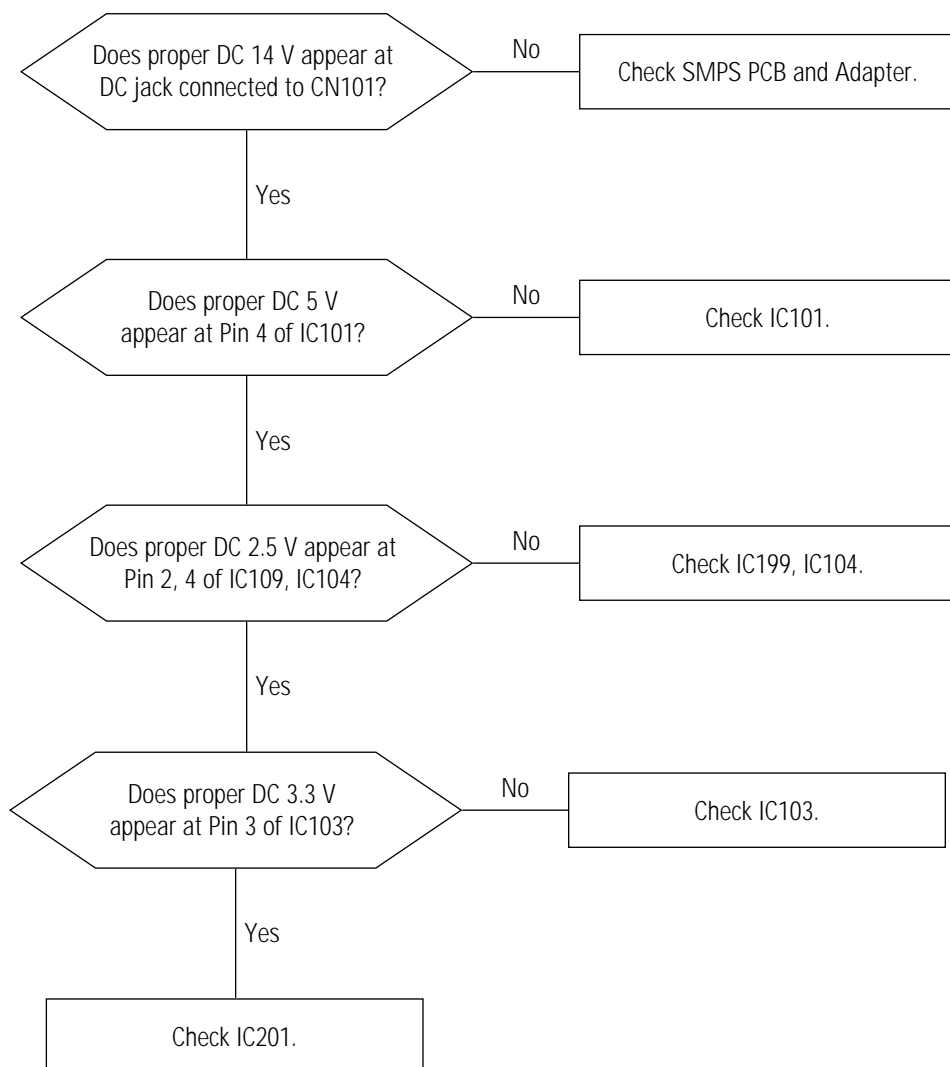
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### 4-1 General Alignment Instruction

1. Usually, a color TV-VCR needs only slight touch-up adjustment upon installation.  
Check the basic characteristics such as height, horizontal and vertical sync.
2. Use the specified test equipment or its equivalent.
3. Correct impedance matching is essential.
4. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test result.
5. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover nameplate.
6. Do not attempt to connect or disconnect any wire while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.
7. To protect against shock hazard, use an isolation transform.

## 5 Troubleshooting

### 5-1 No Power



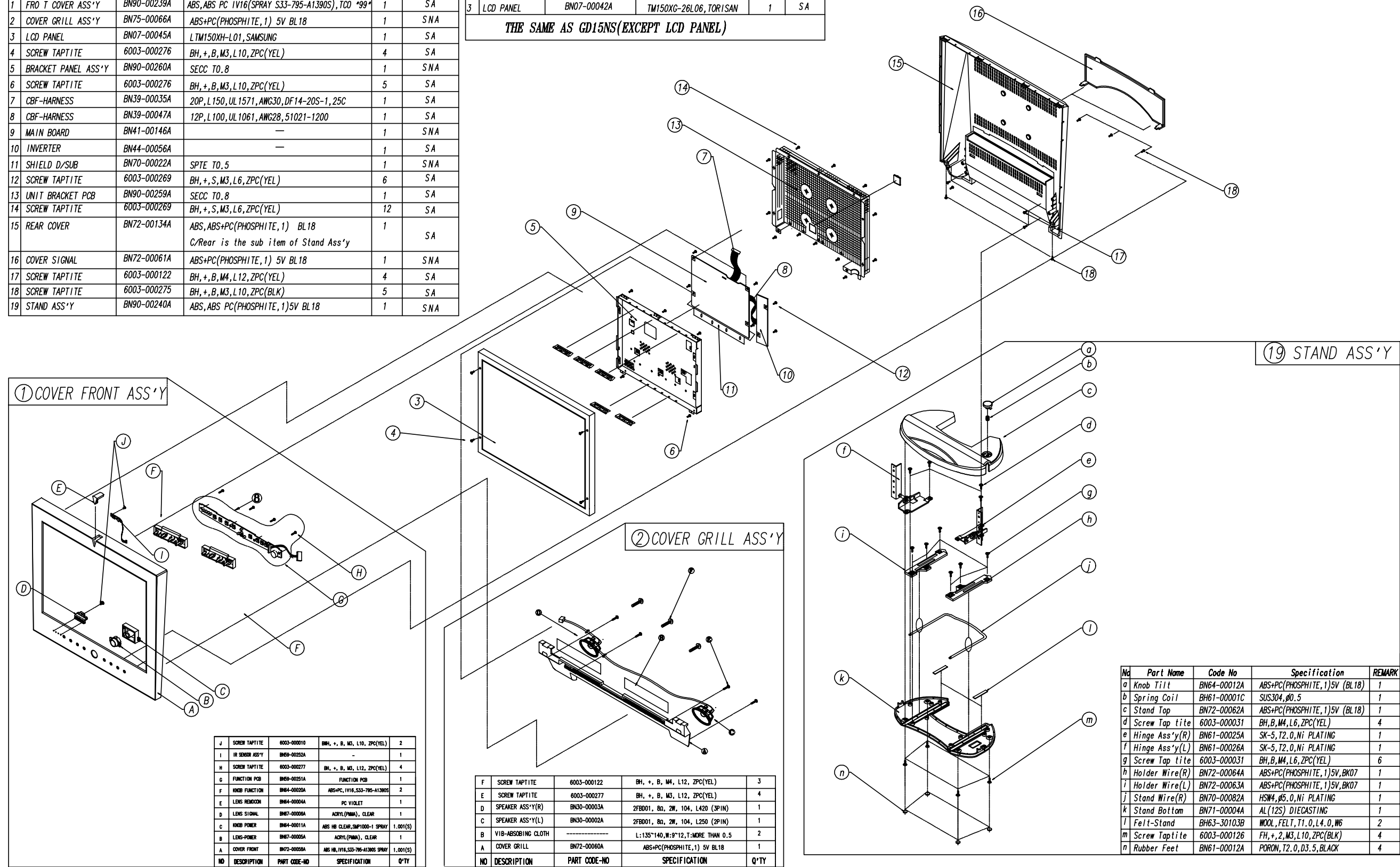
6 Exploded View and Parts List

EXPLODED VIEW(GD15NS)

No	Part Name	Code No	Specification	Q'TY	REMARK
1	FRO T COVER ASS'Y	BN90-00239A	ABS,ABS PC IV16(SPRAY S33-795-A1390S),TCO *99*	1	S A
2	COVER GRILL ASS'Y	BN75-00066A	ABS+PC(PHOSPHITE,1) 5V BL18	1	S N A
3	LCD PANEL	BN07-00045A	LT150XH-L01,SAMSUNG	1	S A
4	SCREW TAPTITE	6003-000276	BH,+,B,M3,L10,ZPC(YEL)	4	S A
5	BRACKET PANEL ASS'Y	BN90-00260A	SECC TO.8	1	S N A
6	SCREW TAPTITE	6003-000276	BH,+,B,M3,L10,ZPC(YEL)	5	S A
7	CBF-HARNESS	BN39-00035A	20P,L150,UL1571,AWG30,DF14-20S-1,25C	1	S A
8	CBF-HARNESS	BN39-00047A	12P,L100,UL1061,AWG28,51021-1200	1	S A
9	MAIN BOARD	BN41-00146A	—	1	S N A
10	INVERTER	BN44-00056A	—	1	S A
11	SHIELD D/SUB	BN70-00022A	SPT E TO.5	1	S N A
12	SCREW TAPTITE	6003-000269	BH,+,S,M3,L6,ZPC(YEL)	6	S A
13	UNIT BRACKET PCB	BN90-00259A	SECC TO.8	1	S A
14	SCREW TAPTITE	6003-000269	BH,+,S,M3,L6,ZPC(YEL)	12	S A
15	REAR COVER	BN72-00134A	ABS,ABS+PC(PHOSPHITE,1) BL18 C/Rear is the sub item of Stand Ass'y	1	S A
16	COVER SIGNAL	BN72-00061A	ABS+PC(PHOSPHITE,1) 5V BL18	1	S N A
17	SCREW TAPTITE	6003-000122	BH,+,B,M4,L12,ZPC(YEL)	4	S A
18	SCREW TAPTITE	6003-000275	BH,+,B,M3,L10,ZPC(BLK)	5	S A
19	STAND ASS'Y	BN90-00240A	ABS,ABS PC(PHOSPHITE,1)5V BL18	1	S N A

EXPLODED VIEW(GD15AS)

No	Part Name	Code No	Specification	Q'TY	REMARK
3	LCD PANEL	BN07-00042A	TM150XG-26L06,TORISAN	1	S A
THE SAME AS GD15NS(EXCEPT LCD PANEL)					



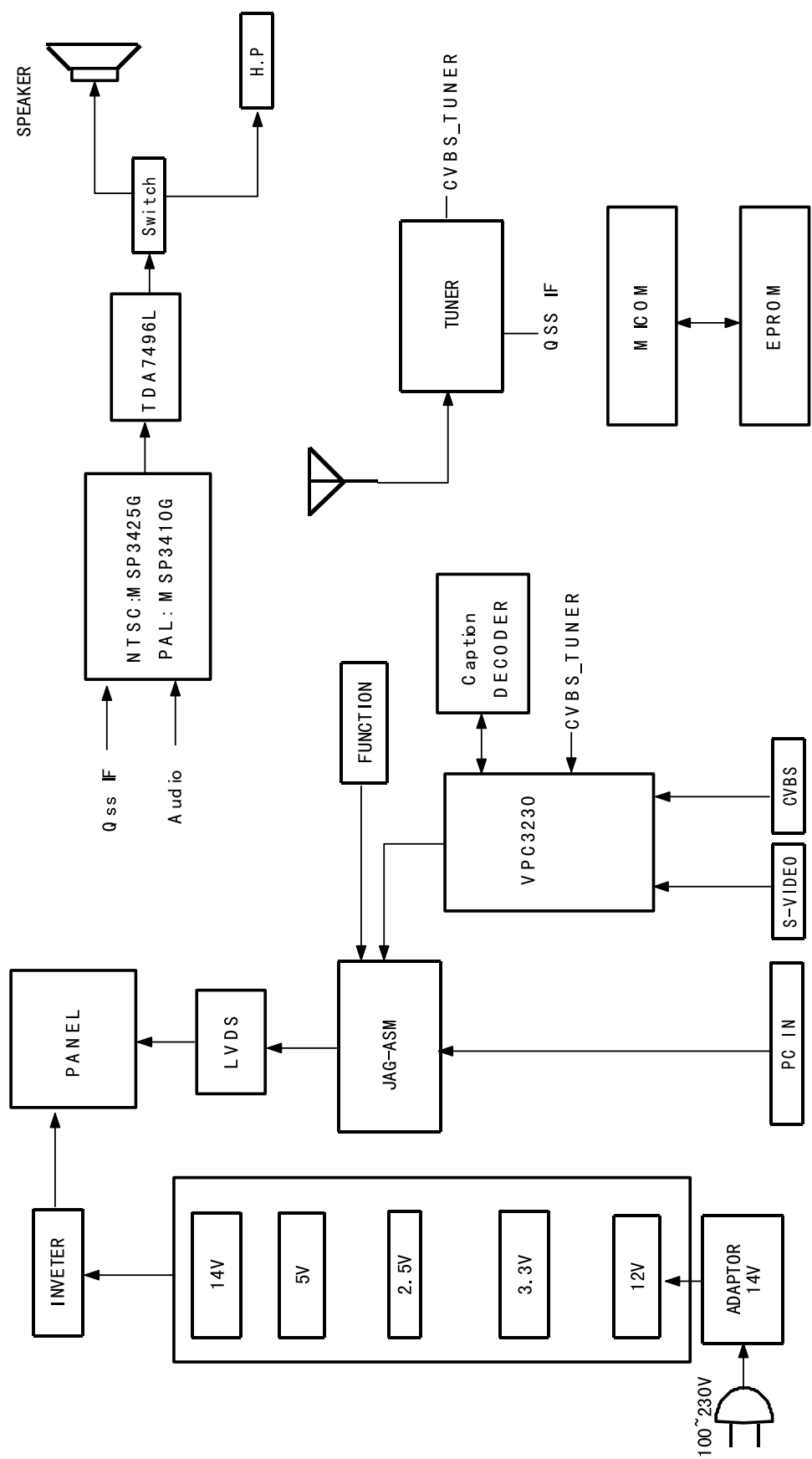
## 7 Electrical Parts List

## 7-1 Main PCB Parts

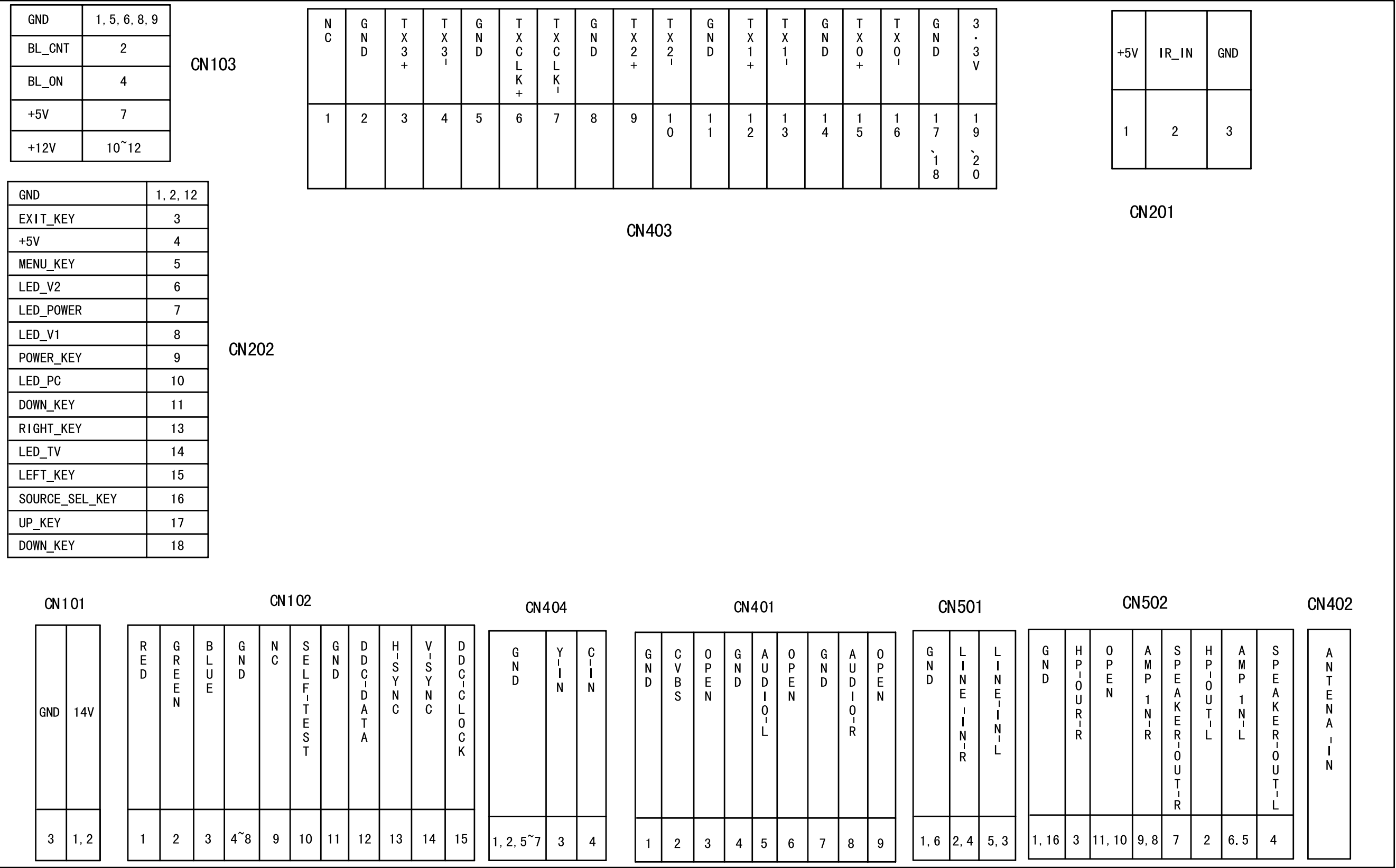
Loc. No.	Code No.	Description	Specification	Remarks
-	BN94-00278A	ASSY PCB MAIN	GD15NS,-,-,-,-,-	SNA
C103	2409-001044	C-ORGANIC	100UF,+20%,16V,WT,TP,8X10.5,5	
C104	2409-001044	C-ORGANIC	100UF,+20%,16V,WT,TP,8X10.5,5	
C502	2401-001363	C-AL	470uF,20%,16V,GP,TP,10x12.5,5	
C503	2401-001363	C-AL	470uF,20%,16V,GP,TP,10x12.5,5	
C504	2401-001363	C-AL	470uF,20%,16V,GP,TP,10x12.5,5	
CIS	0201-001223	ADHESIVE-TS	HT-130S,RED,700+/- 50,-	SNA
CIS	BN70-00022A	BRACKET HINGE-LEFT	GD15NS,SHIELD D/SUB	SNA
CN101	3722-000117	JACK-DC POWER	3P,3.5mm,AG,BLK,NO	SNA
CN102	3701-001219	CONNECTOR-DSUB	15P,3R,FEMALE,ANGLE,AUF	
CN201	3711-000057	CONNECTOR-HEADER	BOX,3P,1R,2.5mm,ANGLE,SN	SNA
CN202	3711-002000	CONNECTOR-HEADER	BOX,18P,2R,2mm,STRAIGHT,SN	
CN401	3722-001031	JACK-PIN	3P,3.6mm,#18,AU	
CN402	BH40-00004A	TUNER	TCLN9081PA27D,-,NTSC,181CH,45.75MHZ,-,-,-,F-CON,ASYMM,5V,TR,,,,,,,,,,,,,	
CN404	3722-001100	JACK-DIN	4P/2C,6mm,AG,BLK,NO	SNA
CN501	3722-001055	JACK-PHONE	5P/2C,3.6PI,AG,BLK,#16-22	SNA
CN502	3722-000143	JACK-PHONE	1P(VER),3.4PI,AG,BLK,NO	
CN503	3711-004386	CONNECTOR-HEADER	BOX,3P,1R,2mm,ANGLE,SN	SNA
CN504	3711-004270	CONNECTOR-HEADER	BOX,2P,1R,2MM,ANGLE,SN	SNA
IC201	0903-001215	IC-MICROCONTROLLER	80C32X2,8BIT,PLCC,44P,-,40MHZ,TR,CMOS,PLASTIC,5V,1W,0to+70C,256BYTE,-,88it,300nS	SNA
IC502	1204-001833	IC-VOLUME CONTROL	TDA7496L,DIP,20P,-,PLASTIC,26V,6W,0TO+70C,ST,AMP&VOLUME CONTROL	
L401	2701-000146	INDUCTOR-AXIAL	2.2uH,10%,2.5x3.4mm	
L402	2701-000157	INDUCTOR-AXIAL	220uH,5%,2.5x3.4mm	
L403	2701-000210	INDUCTOR-AXIAL	680uH,10%,3x7mm	
L408	2701-000114	INDUCTOR-AXIAL	10uH,10%,2.5x3.4mm	
L409	2701-000114	INDUCTOR-AXIAL	10uH,10%,2.5x3.4mm	
L410	2701-000146	INDUCTOR-AXIAL	2.2uH,10%,2.5x3.4mm	
L411	2701-000146	INDUCTOR-AXIAL	2.2uH,10%,2.5x3.4mm	
L412	2701-000146	INDUCTOR-AXIAL	2.2uH,10%,2.5x3.4mm	
-	BN97-00054W	ASSY MICOM	GD15NS,-,-,-,-,-,-,-,-,-	
IC203	1102-001097	IC-EPROM	27C010,128KX8BIT,PLCC,32P,-,90NS,5V,10%,PLASTIC,0TO+70C,0.1MA,CMOS,TR	
CIS	BN46-00008U	MICOM-S/W	GD15NS,-,-,-,-,-,-,-	SNA
-	BN97-00074A	ASSY SMD-MAIN	GD15NS	SNA
BD101	3301-001236	CORE-FERRITE BEAD	AB,60ohm,1.6x0.8x0.8mm,200mA,TP,H,0.7ohm	
BD102	3301-001236	CORE-FERRITE BEAD	AB,60ohm,1.6x0.8x0.8mm,200mA,TP,H,0.7ohm	
BD103	3301-001236	CORE-FERRITE BEAD	AB,60ohm,1.6x0.8x0.8mm,200mA,TP,H,0.7ohm	
BD104	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
BD201	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
BD202	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
BD203	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
BD204	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
BD205	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
BD206	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
BD207	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
BD401	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
BD402	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
BD403	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	

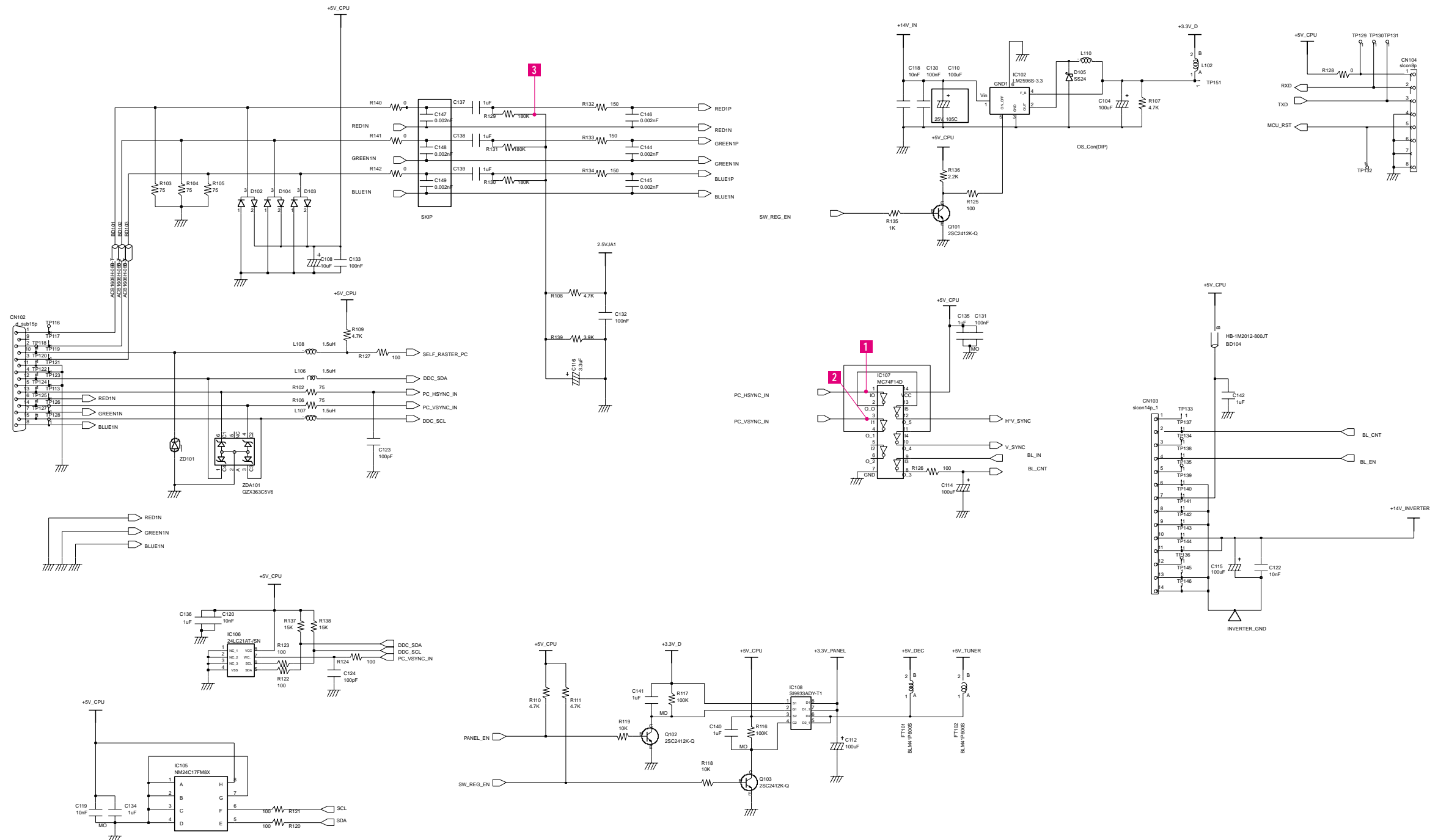


8 Block Diagram



9 Wiring Diagram





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GD15N\*/GD15A\* Service Manual

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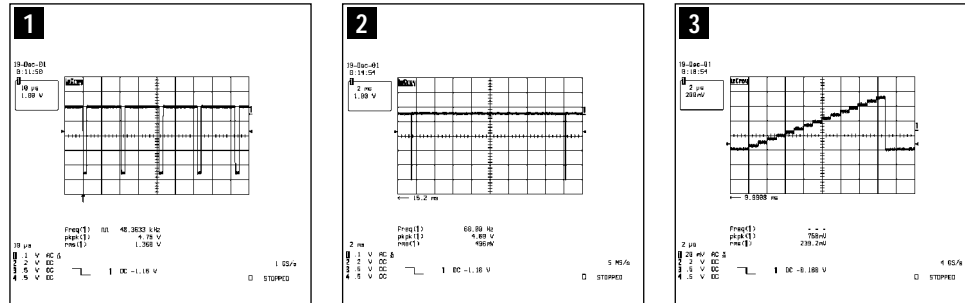
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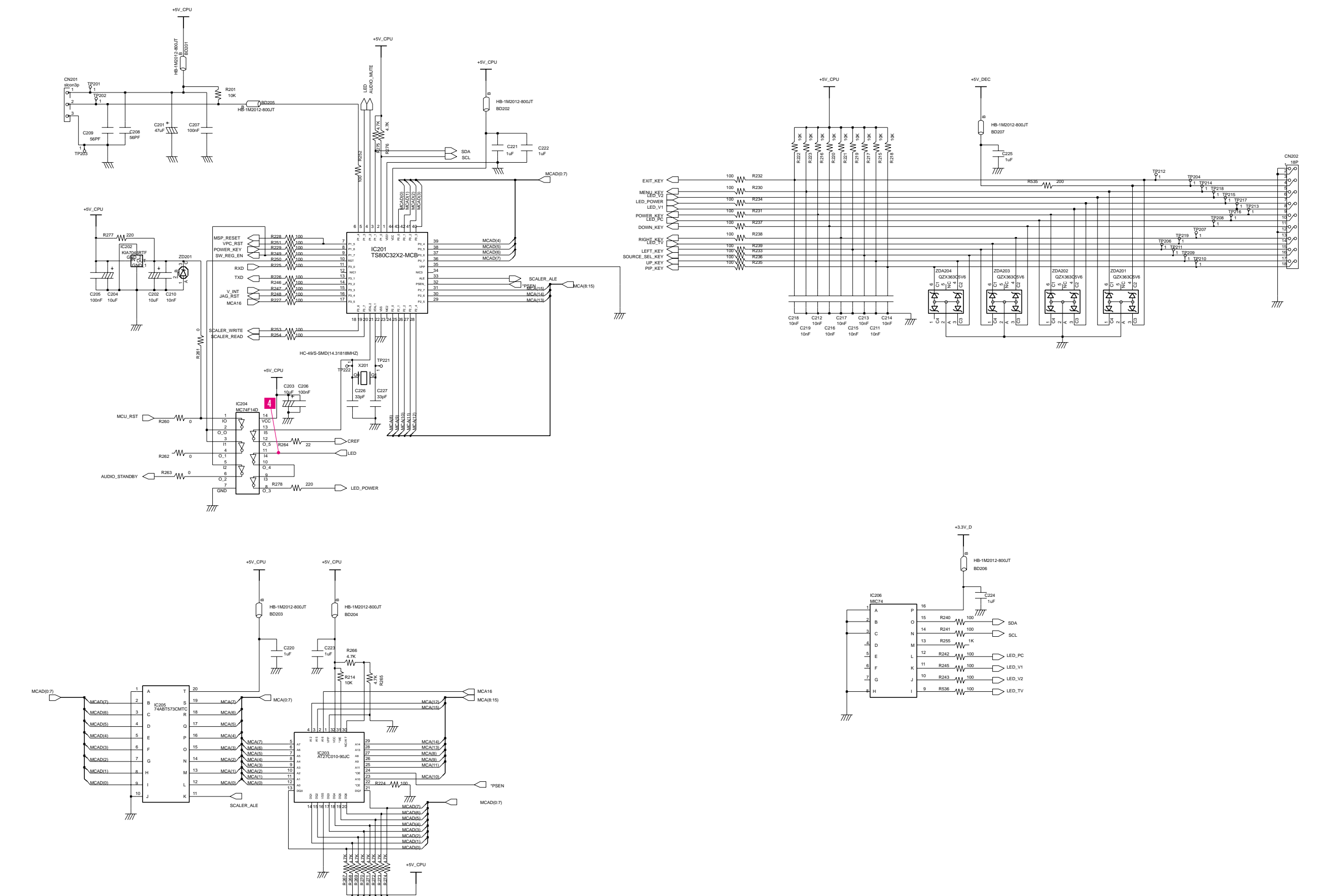
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## 10 Schematic Diagrams

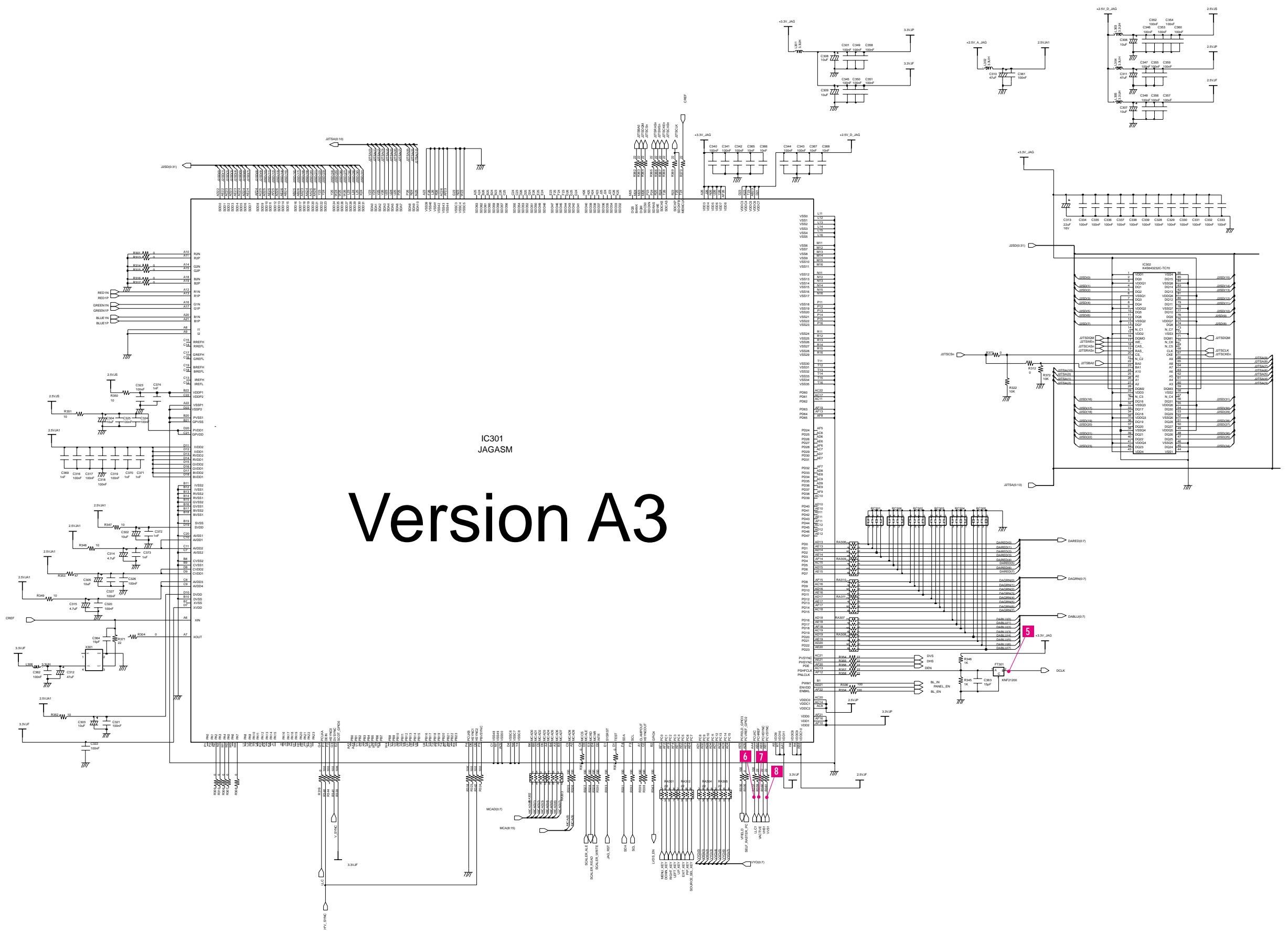
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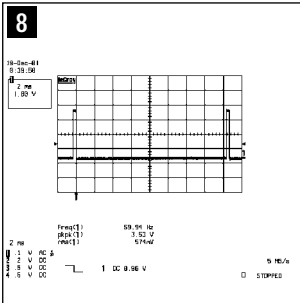
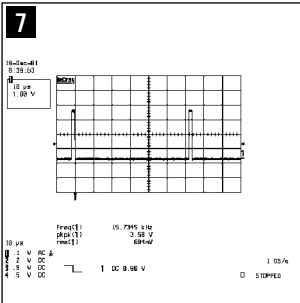
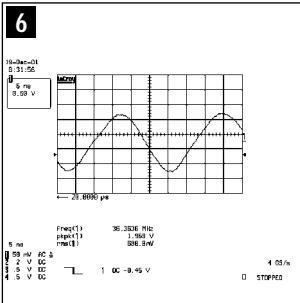
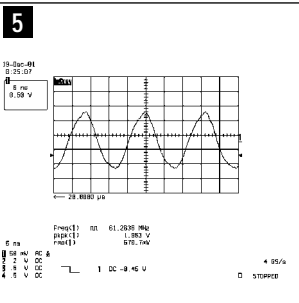
10-2 MICOM Part Schematic Diagram





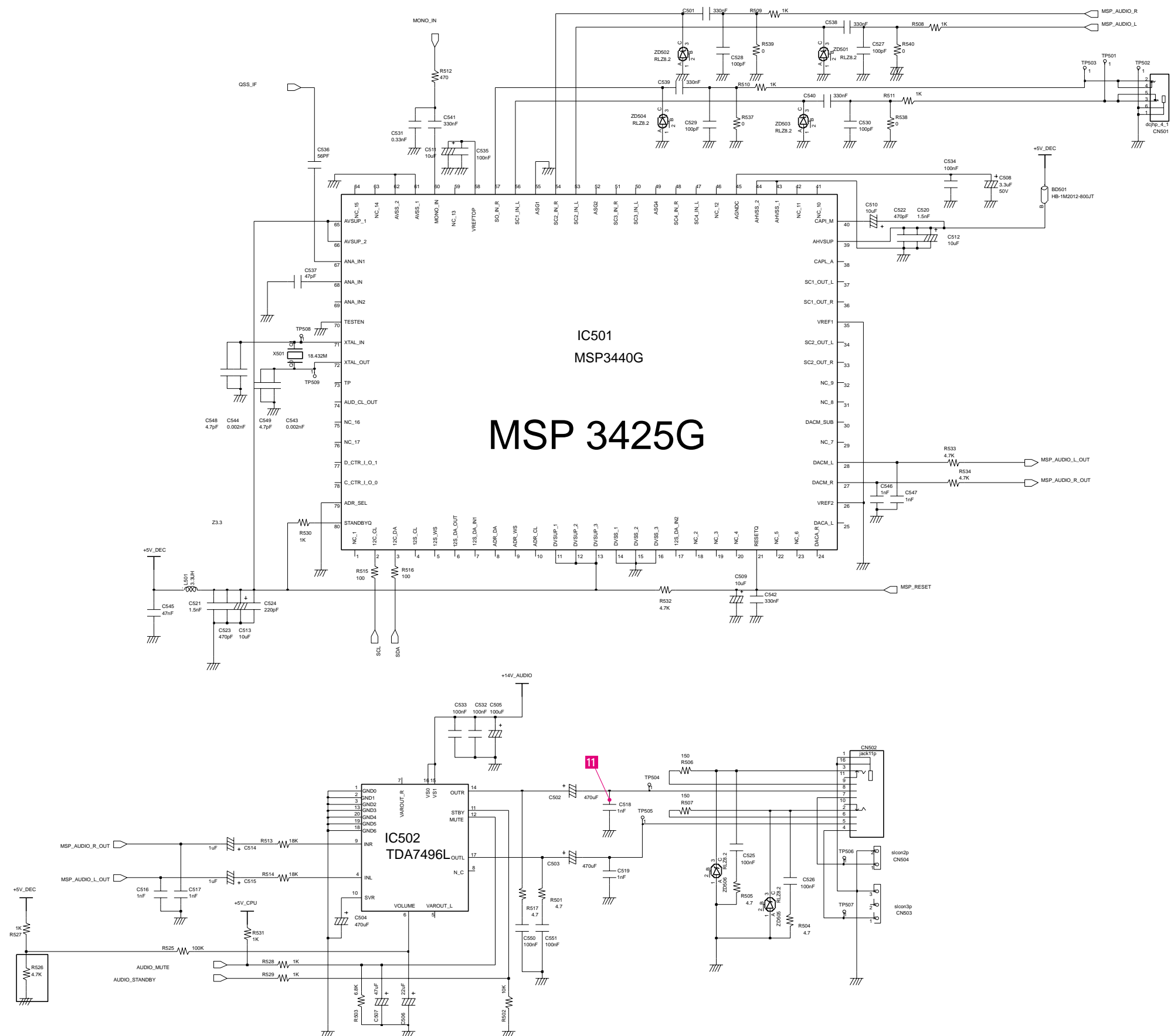






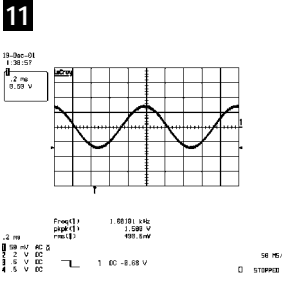
GD15N<sup>\*</sup>/GD15A<sup>\*</sup>





## 10 Schematic Diagrams

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Memo

Memo

Loc. No.	Code No.	Description	Specification	Remarks
BD404	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
BD405	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
BD406	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
BD501	3301-001163	CORE-FERRITE BEAD	AB,80ohm,2x1.25x1mm,300mA,TP,FERRITE,0.08ohm	
C101	2402-001044	C-AL,SMD	100uF,20%,25V,-,TP,8.3x8.3x6.3	
C102	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C105	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C106	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C107	2402-000108	C-AL,SMD	10uF,20%,16V,WT,TP,4.3x4.3x5.4	
C108	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C109	2402-001081	C-AL,SMD	100uF,20%,25V,WT,TP,8.3x8.3x10	
C110	2402-001081	C-AL,SMD	100uF,20%,25V,WT,TP,8.3x8.3x10	
C111	2402-001042	C-AL,SMD	100uF,20%,16V,GP,TP,6.6x6.6x5.4mm	
C112	2402-001042	C-AL,SMD	100uF,20%,16V,GP,TP,6.6x6.6x5.4mm	
C113	2402-001044	C-AL,SMD	100uF,20%,25V,-,TP,8.3x8.3x6.3	
C114	2402-001042	C-AL,SMD	100uF,20%,16V,GP,TP,6.6x6.6x5.4mm	
C115	2402-001044	C-AL,SMD	100uF,20%,25V,-,TP,8.3x8.3x6.3	
C116	2402-000144	C-AL,SMD	3.3uF,20%,50V,GP,TP,4.3x4.3x5.	
C117	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C118	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C119	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C120	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C121	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C122	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C123	2203-000236	C-CERAMIC,CHIP	0.1nF,5%,50V,NP0,TP,1608	
C124	2203-000236	C-CERAMIC,CHIP	0.1nF,5%,50V,NP0,TP,1608	
C125	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C126	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C127	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C128	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C129	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C130	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C131	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C132	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C133	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C134	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C135	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C136	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C137	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C138	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C139	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C140	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C141	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C142	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C144	2203-000697	C-CERAMIC,CHIP	0.002nF,0.25pF,50V,NP0,TP,1608	
C145	2203-000697	C-CERAMIC,CHIP	0.002nF,0.25pF,50V,NP0,TP,1608	
C146	2203-000697	C-CERAMIC,CHIP	0.002nF,0.25pF,50V,NP0,TP,1608	
C201	2402-000179	C-AL,SMD	47uF,20%,16V,GP,TP,6.6x6.6x5.4	
C202	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	



Loc. No.	Code No.	Description	Specification	Remarks
C203	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C204	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C205	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C206	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C207	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C208	2203-001077	C-CERAMIC,CHIP	0.056nF,5%,50V,NP0,TP,2012	
C209	2203-001077	C-CERAMIC,CHIP	0.056nF,5%,50V,NP0,TP,2012	
C210	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C211	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C212	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C213	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C214	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C215	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C216	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C217	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C218	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C219	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C220	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C221	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C222	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C223	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C224	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C225	2203-005065	C-CERAMIC,CHIP	1000nF,+80-20%,10V,Y5V,TP,1608	
C226	2203-000384	C-CERAMIC,CHIP	0.015nF,5%,50V,NP0,TP,1608	
C227	2203-000384	C-CERAMIC,CHIP	0.015nF,5%,50V,NP0,TP,1608	
C301	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C302	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C303	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C304	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C305	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C306	2402-000108	C-AL,SMD	10uF,20%,16V,WT,TP,4.3x4.3x5.4	
C307	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C308	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C309	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C310	2402-000179	C-AL,SMD	47uF,20%,16V,GP,TP,6.6x6.6x5.4	
C311	2402-000179	C-AL,SMD	47uF,20%,16V,GP,TP,6.6x6.6x5.4	
C313	2402-000135	C-AL,SMD	22uF,20%,16V,GP,TP,5.3x5.3x5.4	
C314	2402-001006	C-AL,SMD	4.7uF,20%,25V,GP,TP,3.6x6.3x3.	
C315	2402-001006	C-AL,SMD	4.7uF,20%,25V,GP,TP,3.6x6.3x3.	
C316	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C317	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C318	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C319	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C320	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C321	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C322	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C323	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C324	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C325	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	

Loc. No.	Code No.	Description	Specification	Remarks
C326	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C327	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C328	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C329	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C330	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C331	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C332	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C333	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C334	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C335	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C336	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C337	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C338	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C339	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C340	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C341	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C342	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C343	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C344	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C345	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C346	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C347	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C348	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C349	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C350	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C351	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C352	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C353	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C354	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C355	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C356	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C357	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C358	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C359	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C360	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C361	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C363	2203-000384	C-CERAMIC,CHIP	0.015nF,5%,50V,NP0,TP,1608	
C365	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C366	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C367	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C368	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C369	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C370	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C371	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C372	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C373	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C374	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C401	2203-000626	C-CERAMIC,CHIP	0.022nF,5%,50V,NP0,TP,1608	
C402	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	

Loc. No.	Code No.	Description	Specification	Remarks
C403	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C404	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C405	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C406	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C407	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C408	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C409	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C410	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C411	2402-000135	C-AL,SMD	22uF,20%,16V,GP,TP,5.3x5.3x5.4	
C412	2402-001042	C-AL,SMD	100uF,20%,16V,GP,TP,6.6x6.6x5.4mm	
C413	2402-001042	C-AL,SMD	100uF,20%,16V,GP,TP,6.6x6.6x5.4mm	
C414	2203-000332	C-CERAMIC,CHIP	0.012nF,5%,50V,NP0,TP,1608	
C415	2203-000332	C-CERAMIC,CHIP	0.012nF,5%,50V,NP0,TP,1608	
C416	2203-000491	C-CERAMIC,CHIP	2.2nF,10%,50V,X7R,TP,1608,-	
C417	2203-000491	C-CERAMIC,CHIP	2.2nF,10%,50V,X7R,TP,1608,-	
C418	2203-000972	C-CERAMIC,CHIP	47nF,10%,16V,X7R,TP,1608	
C419	2203-000972	C-CERAMIC,CHIP	47nF,10%,16V,X7R,TP,1608	
C420	2203-000972	C-CERAMIC,CHIP	47nF,10%,16V,X7R,TP,1608	
C421	2203-000972	C-CERAMIC,CHIP	47nF,10%,16V,X7R,TP,1608	
C422	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C423	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C424	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C425	2203-000257	C-CERAMIC,CHIP	10nF,10%,50V,X7R,TP,1608	
C426	2203-001652	C-CERAMIC,CHIP	470nF,+80-20%,16V,Y5V,TP,1608	
C427	2203-001652	C-CERAMIC,CHIP	470nF,+80-20%,16V,Y5V,TP,1608	
C428	2203-001652	C-CERAMIC,CHIP	470nF,+80-20%,16V,Y5V,TP,1608	
C429	2203-001652	C-CERAMIC,CHIP	470nF,+80-20%,16V,Y5V,TP,1608	
C430	2203-000140	C-CERAMIC,CHIP	1.5nF,10%,50V,X7R,TP,1608,-	
C431	2203-000140	C-CERAMIC,CHIP	1.5nF,10%,50V,X7R,TP,1608,-	
C432	2203-000140	C-CERAMIC,CHIP	1.5nF,10%,50V,X7R,TP,1608,-	
C433	2203-000140	C-CERAMIC,CHIP	1.5nF,10%,50V,X7R,TP,1608,-	
C434	2203-001140	C-CERAMIC,CHIP	68nF,10%,16V,X7R,TP,1608,-	
C435	2203-001140	C-CERAMIC,CHIP	68nF,10%,16V,X7R,TP,1608,-	
C436	2203-001140	C-CERAMIC,CHIP	68nF,10%,16V,X7R,TP,1608,-	
C437	2203-000838	C-CERAMIC,CHIP	0.39nF,5%,50V,NP0,TP,1608	
C438	2203-001402	C-CERAMIC,CHIP	220nF,+80-20%,16V,Y5V,TP,1608	
C439	2203-001402	C-CERAMIC,CHIP	220nF,+80-20%,16V,Y5V,TP,1608	
C440	2203-001402	C-CERAMIC,CHIP	220nF,+80-20%,16V,Y5V,TP,1608	
C441	2203-001402	C-CERAMIC,CHIP	220nF,+80-20%,16V,Y5V,TP,1608	
C442	2203-001402	C-CERAMIC,CHIP	220nF,+80-20%,16V,Y5V,TP,1608	
C443	2203-001630	C-CERAMIC,CHIP	330nF,+80-20%,16V,Y5V,TP,1608	
C444	2203-000626	C-CERAMIC,CHIP	0.022nF,5%,50V,NP0,TP,1608	
C445	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C446	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C447	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C448	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C449	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C450	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C451	2203-000815	C-CERAMIC,CHIP	0.033nF,5%,50V,NP0,TP,1608	

Loc. No.	Code No.	Description	Specification	Remarks
C452	2203-000815	C-CERAMIC,CHIP	0.033nF,5%,50V,NP0,TP,1608	
C453	2203-000815	C-CERAMIC,CHIP	0.033nF,5%,50V,NP0,TP,1608	
C454	2203-000815	C-CERAMIC,CHIP	0.033nF,5%,50V,NP0,TP,1608	
C455	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C456	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C457	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C458	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C459	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C460	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C461	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C462	2203-001656	C-CERAMIC,CHIP	0.47nF,5%,50V,NP0,TP,1608	
C463	2203-001656	C-CERAMIC,CHIP	0.47nF,5%,50V,NP0,TP,1608	
C464	2203-001656	C-CERAMIC,CHIP	0.47nF,5%,50V,NP0,TP,1608	
C465	2203-001656	C-CERAMIC,CHIP	0.47nF,5%,50V,NP0,TP,1608	
C466	2203-000280	C-CERAMIC,CHIP	0.01nF,0.5pF,50V,NP0,TP,1608	
C467	2203-000998	C-CERAMIC,CHIP	0.047nF,5%,50V,NP0,TP,1608	
C468	2402-001042	C-AL,SMD	100uF,20%,16V,GP,TP,6.6x6.6x5.4mm	
C469	2203-000384	C-CERAMIC,CHIP	0.015nF,5%,50V,NP0,TP,1608	
C470	2203-000384	C-CERAMIC,CHIP	0.015nF,5%,50V,NP0,TP,1608	
C501	2203-001630	C-CERAMIC,CHIP	330nF,+80-20%,16V,Y5V,TP,1608	
C505	2402-001042	C-AL,SMD	100uF,20%,16V,GP,TP,6.6x6.6x5.4mm	
C506	2402-000135	C-AL,SMD	22uF,20%,16V,GP,TP,5.3x5.3x5.4	
C507	2402-000179	C-AL,SMD	47uF,20%,16V,GP,TP,6.6x6.6x5.4	
C508	2402-000144	C-AL,SMD	3.3uF,20%,50V,GP,TP,4.3x4.3x5.4	
C509	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C510	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C511	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C512	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C513	2402-000176	C-AL,SMD	10uF,20%,16V,GP,TP,4.3x4.3x5.4	
C514	2402-000170	C-AL,SMD	1uF,20%,50V,GP,TP,4.3x4.3x5.4,	
C515	2402-000170	C-AL,SMD	1uF,20%,50V,GP,TP,4.3x4.3x5.4,	
C516	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C517	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C518	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C519	2203-000440	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,1608,-	
C520	2203-000140	C-CERAMIC,CHIP	1.5nF,10%,50V,X7R,TP,1608,-	
C521	2203-000140	C-CERAMIC,CHIP	1.5nF,10%,50V,X7R,TP,1608,-	
C522	2203-001656	C-CERAMIC,CHIP	0.47nF,5%,50V,NP0,TP,1608	
C523	2203-001656	C-CERAMIC,CHIP	0.47nF,5%,50V,NP0,TP,1608	
C524	2203-001607	C-CERAMIC,CHIP	0.22nF,5%,50V,NP0,TP,1608	
C525	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C526	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C527	2203-000236	C-CERAMIC,CHIP	0.1nF,5%,50V,NP0,TP,1608	
C528	2203-000236	C-CERAMIC,CHIP	0.1nF,5%,50V,NP0,TP,1608	
C529	2203-000236	C-CERAMIC,CHIP	0.1nF,5%,50V,NP0,TP,1608	
C530	2203-000236	C-CERAMIC,CHIP	0.1nF,5%,50V,NP0,TP,1608	
C531	2203-000783	C-CERAMIC,CHIP	0.33nF,5%,50V,NP0,TP,1608	
C532	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C533	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	

Loc. No.	Code No.	Description	Specification	Remarks
C534	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C535	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C536	2203-001077	C-CERAMIC,CHIP	0.056nF,5%,50V,NP0,TP,2012	
C537	2203-000998	C-CERAMIC,CHIP	0.047nF,5%,50V,NP0,TP,1608	
C538	2203-001630	C-CERAMIC,CHIP	330nF,+80-20%,16V,Y5V,TP,1608	
C539	2203-001630	C-CERAMIC,CHIP	330nF,+80-20%,16V,Y5V,TP,1608	
C540	2203-001630	C-CERAMIC,CHIP	330nF,+80-20%,16V,Y5V,TP,1608	
C541	2203-001630	C-CERAMIC,CHIP	330nF,+80-20%,16V,Y5V,TP,1608	
C542	2203-001630	C-CERAMIC,CHIP	330nF,+80-20%,16V,Y5V,TP,1608	
C543	2203-000697	C-CERAMIC,CHIP	0.002nF,0.25pF,50V,NP0,TP,1608	
C544	2203-000697	C-CERAMIC,CHIP	0.002nF,0.25pF,50V,NP0,TP,1608	
C545	2203-000972	C-CERAMIC,CHIP	47nF,10%,16V,X7R,TP,1608	
C548	2203-000903	C-CERAMIC,CHIP	0.0047nF,0.25pF,50V,NP0,TP,1608	
C549	2203-000903	C-CERAMIC,CHIP	0.0047nF,0.25pF,50V,NP0,TP,1608	
C550	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
C551	2203-000189	C-CERAMIC,CHIP	100nF,+80-20%,25V,Y5V,TP,1608,	
CN103	3711-002046	CONNECTOR-HEADER	3WALL,12P,1R,1.25mm,SMD-S,SN	SNA
CN104	3711-002049	CONNECTOR-HEADER	BOX,6P,1R,1.25mm,SMD-A,SN	SNA
CN403	3711-003161	CONNECTOR-HEADER	BOX,20P,1R,1.25mm,ANGLE,SN	SNA
D101	0402-000553	DIODE-RECTIFIER	SS24,40V,2.0A,DO-214AA	
D102	0401-001056	DIODE-SWITCHING	MMBD4148SE,75V,200MA,SOT-23,TP	
D103	0401-001056	DIODE-SWITCHING	MMBD4148SE,75V,200MA,SOT-23,TP	
D104	0401-001056	DIODE-SWITCHING	MMBD4148SE,75V,200MA,SOT-23,TP	
D105	0402-000553	DIODE-RECTIFIER	SS24,40V,2.0A,DO-214AA	
D401	0401-001056	DIODE-SWITCHING	MMBD4148SE,75V,200MA,SOT-23,TP	
D402	0401-001056	DIODE-SWITCHING	MMBD4148SE,75V,200MA,SOT-23,TP	
D403	0401-001056	DIODE-SWITCHING	MMBD4148SE,75V,200MA,SOT-23,TP	
D404	0401-001056	DIODE-SWITCHING	MMBD4148SE,75V,200MA,SOT-23,TP	
D405	0403-001382	DIODE-ZENER	UDZ33B,32.15-33.79V,200mW,SOD-323,TP	
FT101	3301-001145	CORE-FERRITE BEAD	AB,4.5x1.6x1.6mm,-,-	SNA
FT102	3301-001145	CORE-FERRITE BEAD	AB,4.5x1.6x1.6mm,-,-	SNA
FT301	2901-001133	FILTER-EMI SMD	25V,0.15A,-,33pF,2x1.25x0.8mm,TP	
IC101	1203-001448	IC-POSI.FIXED REG.	2596,TO-263,5P,-,PLASTIC,4.750	
IC102	1203-001447	IC-POSI.FIXED REG.	2596,TO-263,5P,-,PLASTIC,3.135	
IC103	1203-001293	IC-POSI.FIXED REG.	033,TO-252,3P,6.5MIL,PLASTIC,3	
IC104	1203-001465	IC-POSI.ADJUST REG.	317,TO-263,3P,-,PLASTIC,1.2/37	
IC105	1103-000138	IC-EEPROM	24C16,2Kx8BIT,SOP,8P,150MIL,10	
IC106	1103-001164	IC-EEPROM	24LC21A,128X8BIT,SOP,8P,150MIL,-,5V,10%,PLASTIC,0 TO +70C,100UA,CMOS,TP	
IC107	0803-000117	IC-TTL	74F14,INVERTER,SOP,14P,150MIL,	
IC109	1203-002410	IC-POSI.ADJUST REG.	KA317MR,D-PAK,3P,240MIL,PLASTIC,40V,-,0TO+125C,0.5A,1.2/1.3V,TP	
IC201 SOCK	3704-000001	SOCKET-IC	44P,PLCC,SN,-	
IC202	1203-001109	IC-VOL. DETECTOR	7045,SOT-89,3P,-,PLASTIC,4.3/4	
IC203 SOCK	3704-000249	SOCKET-IC	32P,PLCC,SN,1.27mm	
IC204	0803-000117	IC-TTL	74F14,INVERTER,SOP,14P,150MIL,	
IC205	0802-001108	IC-BICMOS LOGIC	74ABT573,LATCH,TSSOP,20P,173MIL,8,TR,PLASTIC,3-STATE,-,0.55V,-65TO+150C,-,0.8V,5	
IC206	0904-001633	IC-I/O SUPPORT CHIP	MIC74BOS,-,QSOP,14P,4.98X3.99MM,-,TP,CMOS,PLASTIC,3.3V,-,40TO+85C,-----	
IC301	1205-002028	IC-LCD CONTROLLER	JAGASM,BGA,388P,208MIL,PLASTIC,3.45V,2.5V,-,40TO+125C,TR,DIGITAL DISPLAY PRO.	
IC302	1105-001391	IC-DRAM	EM638325,2MX32BIT,TSSOP(11),86P,400MIL,60NS,3.3V,10%,PLASTIC,0TO+70C,3MA,-,TR	
IC401	1204-001388	IC-DECODER	Z86129,SOP,18P,-,PLASTIC,6.0V,	

Loc. No.	Code No.	Description	Specification	Remarks
IC402	1204-001926	IC-VIDEO PROCESS	VPC3230D-C5,POFP,80P,-,PLASTIC,6V,-,0 TO 65C,TP,VPC3230D-C5	
IC403	1205-001740	IC-TRANSMITTER	DS90C385,TSSOP,56P,240MIL,PLASTIC,4V,1.63W,-,10 TO +70C,ST,PPD LINK-85MHZ(LVDS)	
IC501	1204-001711	IC-SOUND PROCESSOR	MSP3425G,QFP,80P,-,PLASTIC,9V,1000mW,0to+70C,TR,Multistandard Sound	
L101	3301-001145	CORE-FERRITE BEAD	AB,4.5x1.6x1.6mm,-,-	SNA
L102	3301-001145	CORE-FERRITE BEAD	AB,4.5x1.6x1.6mm,-,-	SNA
L103	3301-001145	CORE-FERRITE BEAD	AB,4.5x1.6x1.6mm,-,-	SNA
L104	3301-001145	CORE-FERRITE BEAD	AB,4.5x1.6x1.6mm,-,-	SNA
L105	3301-001145	CORE-FERRITE BEAD	AB,4.5x1.6x1.6mm,-,-	SNA
L106	2703-001334	INDUCTOR-SMD	1.5uH,10%,2x1.25x0.85mm	
L107	2703-001334	INDUCTOR-SMD	1.5uH,10%,2x1.25x0.85mm	
L108	2703-001334	INDUCTOR-SMD	1.5uH,10%,2x1.25x0.85mm	
L109	BN27-00002A	COIL-CHOKE(SMD)	47uH,47uH,20%,12*12*8mm,22.5Ts,SMD,-,-,0.75ohm,-,-,TP	
L110	BN27-20001A	COIL-CHOKE	-.53.0UH,20%,DR10*5,-,-,-,0.18ohm,-,-,TRAY	
L301	2703-001778	INDUCTOR-SMD	3.3UH,20%,3.2X2.5X2.2MM	
L302	2703-001778	INDUCTOR-SMD	3.3UH,20%,3.2X2.5X2.2MM	
L303	2703-001778	INDUCTOR-SMD	3.3UH,20%,3.2X2.5X2.2MM	
L304	2703-001778	INDUCTOR-SMD	3.3UH,20%,3.2X2.5X2.2MM	
L305	2703-001778	INDUCTOR-SMD	3.3UH,20%,3.2X2.5X2.2MM	
L404	2703-001778	INDUCTOR-SMD	3.3UH,20%,3.2X2.5X2.2MM	
L405	2703-001778	INDUCTOR-SMD	3.3UH,20%,3.2X2.5X2.2MM	
L406	2703-001778	INDUCTOR-SMD	3.3UH,20%,3.2X2.5X2.2MM	
L407	2703-001778	INDUCTOR-SMD	3.3UH,20%,3.2X2.5X2.2MM	
L413	2703-001778	INDUCTOR-SMD	3.3UH,20%,3.2X2.5X2.2MM	
L501	2703-001778	INDUCTOR-SMD	3.3UH,20%,3.2X2.5X2.2MM	
MP1.0	BN41-00146A	PCB MAIN	GD15NS,FR4,4L,-,-,200*130*1.6,GD15NS,-,-,-	
Q101	0501-002080	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SC-59,TP,120-270	
Q102	0501-002080	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SC-59,TP,120-270	
Q103	0501-002080	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SC-59,TP,120-270	
Q401	0501-002080	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SC-59,TP,120-270	
Q402	0501-002080	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SC-59,TP,120-270	
R101	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R102	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R103	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R104	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R105	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R106	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R107	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R108	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R109	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R110	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R111	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R112	2007-000077	R-CHIP	470ohm,5%,1/16W,DA,TP,1608	
R113	2007-000077	R-CHIP	470ohm,5%,1/16W,DA,TP,1608	
R114	2007-000077	R-CHIP	470ohm,5%,1/16W,DA,TP,1608	
R115	2007-000077	R-CHIP	470ohm,5%,1/16W,DA,TP,1608	
R116	2007-000102	R-CHIP	100Kohm,5%,1/16W,DA,TP,1608	
R117	2007-000102	R-CHIP	100Kohm,5%,1/16W,DA,TP,1608	
R118	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R119	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	

Loc. No.	Code No.	Description	Specification	Remarks
R120	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R121	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R122	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R123	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R124	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R125	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R126	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R127	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R128	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R129	2007-000132	R-CHIP	180Kohm,5%,1/16W,DA,TP,1608	
R130	2007-000132	R-CHIP	180Kohm,5%,1/16W,DA,TP,1608	
R131	2007-000132	R-CHIP	180Kohm,5%,1/16W,DA,TP,1608	
R132	2007-000402	R-CHIP	150ohm,5%,1/16W,DA,TP,1608	
R133	2007-000402	R-CHIP	150ohm,5%,1/16W,DA,TP,1608	
R134	2007-000402	R-CHIP	150ohm,5%,1/16W,DA,TP,1608	
R135	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R136	2007-000124	R-CHIP	2.2Kohm,5%,1/16W,DA,TP,1608	
R137	2007-000092	R-CHIP	15Kohm,5%,1/16W,DA,TP,1608	
R138	2007-000092	R-CHIP	15Kohm,5%,1/16W,DA,TP,1608	
R139	2007-000125	R-CHIP	3.9Kohm,5%,1/16W,DA,TP,1608	
R140	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R141	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R142	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R201	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R214	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R215	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R216	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R217	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R218	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R219	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R220	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R221	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R222	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R223	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R224	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R225	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R226	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R227	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R228	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R229	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R230	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R231	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R232	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R233	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R234	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R235	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R236	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R237	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R238	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	

Loc. No.	Code No.	Description	Specification	Remarks
R239	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R240	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R241	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R242	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R243	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R245	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R246	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R247	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R248	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R249	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R250	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R251	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R252	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R253	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R254	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R255	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R260	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R261	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R262	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R263	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R264	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R265	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R266	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R267	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R268	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R269	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R270	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R271	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R272	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R273	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R274	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R275	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R276	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R277	2007-000075	R-CHIP	220ohm,5%,1/16W,DA,TP,1608	
R278	2007-000075	R-CHIP	220ohm,5%,1/16W,DA,TP,1608	
R301	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R302	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R303	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R304	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R305	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R306	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R307	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R308	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R309	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R310	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R312	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R313	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R314	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R315	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	



Loc. No.	Code No.	Description	Specification	Remarks
R316	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R317	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R318	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R319	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R319	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R320	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R322	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R323	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R324	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R325	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R326	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R327	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R328	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R329	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R330	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R331	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R332	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R333	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R334	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R335	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R336	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R337	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R338	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R339	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R340	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R341	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R342	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R343	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R344	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R345	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R346	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R347	2007-000309	R-CHIP	10ohm,5%,1/16W,DA,TP,1608	
R348	2007-000309	R-CHIP	10ohm,5%,1/16W,DA,TP,1608	
R349	2007-000309	R-CHIP	10ohm,5%,1/16W,DA,TP,1608	
R350	2007-000309	R-CHIP	10ohm,5%,1/16W,DA,TP,1608	
R351	2007-000309	R-CHIP	10ohm,5%,1/16W,DA,TP,1608	
R352	2007-000309	R-CHIP	10ohm,5%,1/16W,DA,TP,1608	
R353	2007-000072	R-CHIP	47ohm,5%,1/16W,DA,TP,1608	
R354	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R355	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R356	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R357	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R358	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R359	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R360	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R361	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R362	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R363	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R364	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	

Loc. No.	Code No.	Description	Specification	Remarks
R365	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R366	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R367	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R368	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R369	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R370	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R401	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R402	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R403	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R404	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R405	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R406	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R407	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R408	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R409	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R410	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R411	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R412	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R413	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R414	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R415	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R416	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R417	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R418	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R419	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R420	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R421	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R422	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R423	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R425	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R426	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R427	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R428	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R429	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R430	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R431	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R432	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R433	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R434	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R435	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R436	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R437	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R438	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R439	2007-000094	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608	
R440	2007-000094	R-CHIP	22Kohm,5%,1/16W,DA,TP,1608	
R441	2007-000092	R-CHIP	15Kohm,5%,1/16W,DA,TP,1608	
R442	2007-000077	R-CHIP	470ohm,5%,1/16W,DA,TP,1608	
R443	2007-000102	R-CHIP	100Kohm,5%,1/16W,DA,TP,1608	
R444	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	

Loc. No.	Code No.	Description	Specification	Remarks
R445	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R446	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R447	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R448	2007-000070	R-CHIP	0ohm,5%,1/16W,DA,TP,1608	
R449	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R450	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R451	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R452	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R453	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R454	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R455	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R456	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R457	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R458	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R459	2007-001167	R-CHIP	75ohm,5%,1/16W,DA,TP,1608	
R460	2007-000072	R-CHIP	47ohm,5%,1/16W,DA,TP,1608	
R462	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R463	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R464	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R465	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R466	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R467	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R468	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R469	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R470	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R471	2007-000071	R-CHIP	22ohm,5%,1/16W,DA,TP,1608	
R501	2007-000881	R-CHIP	4.7OHM,5%,1/10W,DA,TP,2012	
R502	2007-000090	R-CHIP	10KOHM,5%,1/16W,DA,TP,1608	
R503	2007-000087	R-CHIP	6.8Kohm,5%,1/16W,DA,TP,1608	
R504	2007-000881	R-CHIP	4.7OHM,5%,1/10W,DA,TP,2012	
R505	2007-000881	R-CHIP	4.7OHM,5%,1/10W,DA,TP,2012	
R506	2007-000402	R-CHIP	150ohm,5%,1/16W,DA,TP,1608	
R507	2007-000402	R-CHIP	150ohm,5%,1/16W,DA,TP,1608	
R508	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R509	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R510	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R511	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R512	2007-000077	R-CHIP	470ohm,5%,1/16W,DA,TP,1608	
R513	2007-000458	R-CHIP	18Kohm,5%,1/16W,DA,TP,1608	
R514	2007-000458	R-CHIP	18Kohm,5%,1/16W,DA,TP,1608	
R515	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R516	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
R517	2007-000881	R-CHIP	4.7OHM,5%,1/10W,DA,TP,2012	
R525	2007-000102	R-CHIP	100Kohm,5%,1/16W,DA,TP,1608	
R526	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R527	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R528	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R529	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R530	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	

Loc. No.	Code No.	Description	Specification	Remarks
R531	2007-000078	R-CHIP	1Kohm,5%,1/16W,DA,TP,1608	
R532	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R533	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R534	2007-000084	R-CHIP	4.7Kohm,5%,1/16W,DA,TP,1608	
R535	2007-000539	R-CHIP	200ohm,5%,1/16W,DA,TP,1608	
R536	2007-000074	R-CHIP	100ohm,5%,1/16W,DA,TP,1608	
RA301	2011-000002	R-NETWORK	22ohm,5%,63mW,L,CHIP,8P,TP	
RA302	2011-000002	R-NETWORK	22ohm,5%,63mW,L,CHIP,8P,TP	
RA303	2011-000002	R-NETWORK	22ohm,5%,63mW,L,CHIP,8P,TP	
RA304	2011-000002	R-NETWORK	22ohm,5%,63mW,L,CHIP,8P,TP	
RA305	2011-000002	R-NETWORK	22ohm,5%,63mW,L,CHIP,8P,TP	
RA306	2011-001410	R-NETWORK	120OHM,5%,1/16W,L,CHIP,8P,TP	
RA307	2011-001410	R-NETWORK	120OHM,5%,1/16W,L,CHIP,8P,TP	
RA308	2011-001410	R-NETWORK	120OHM,5%,1/16W,L,CHIP,8P,TP	
RA309	2011-001410	R-NETWORK	120OHM,5%,1/16W,L,CHIP,8P,TP	
RA310	2011-001410	R-NETWORK	120OHM,5%,1/16W,L,CHIP,8P,TP	
RA311	2011-001410	R-NETWORK	120OHM,5%,1/16W,L,CHIP,8P,TP	
RA312	2011-000002	R-NETWORK	22ohm,5%,63mW,L,CHIP,8P,TP	
X201	2801-003667	CRYSTAL-SMD	14.3182MHZ,50PPM,28-AAN,16,500HM,TP	
X401	2801-003846	CRYSTAL-SMD	20.25MHz,30ppm,28-AAN,20pF,50ohm,TP	
X501	2801-003843	CRYSTAL-SMD	18.432MHz,30ppm,28-AAN,20pF,50ohm,TP	
ZD101	0403-000579	DIODE-ZENER	BZX84C5V1,5.1V,5%,200mW,SOT-23	
ZD201	0403-000579	DIODE-ZENER	BZX84C5V1,5.1V,5%,200mW,SOT-23	
ZD501	0403-001052	DIODE-ZENER	RD8.2MB,8.2V,7.7-8.64V,200mW,S	
ZD502	0403-001052	DIODE-ZENER	RD8.2MB,8.2V,7.7-8.64V,200mW,S	
ZD503	0403-001052	DIODE-ZENER	RD8.2MB,8.2V,7.7-8.64V,200mW,S	
ZD504	0403-001052	DIODE-ZENER	RD8.2MB,8.2V,7.7-8.64V,200mW,S	
ZD505	0403-001052	DIODE-ZENER	RD8.2MB,8.2V,7.7-8.64V,200mW,S	
ZD506	0403-001052	DIODE-ZENER	RD8.2MB,8.2V,7.7-8.64V,200mW,S	
ZDA101	0403-001435	DIODE-ZENER	QZX363C5V6,5.32-5.88,200MW,SOT-363,TP	
ZDA201	0403-001435	DIODE-ZENER	QZX363C5V6,5.32-5.88,200MW,SOT-363,TP	
ZDA202	0403-001435	DIODE-ZENER	QZX363C5V6,5.32-5.88,200MW,SOT-363,TP	
ZDA203	0403-001435	DIODE-ZENER	QZX363C5V6,5.32-5.88,200MW,SOT-363,TP	
ZDA204	0403-001435	DIODE-ZENER	QZX363C5V6,5.32-5.88,200MW,SOT-363,TP	

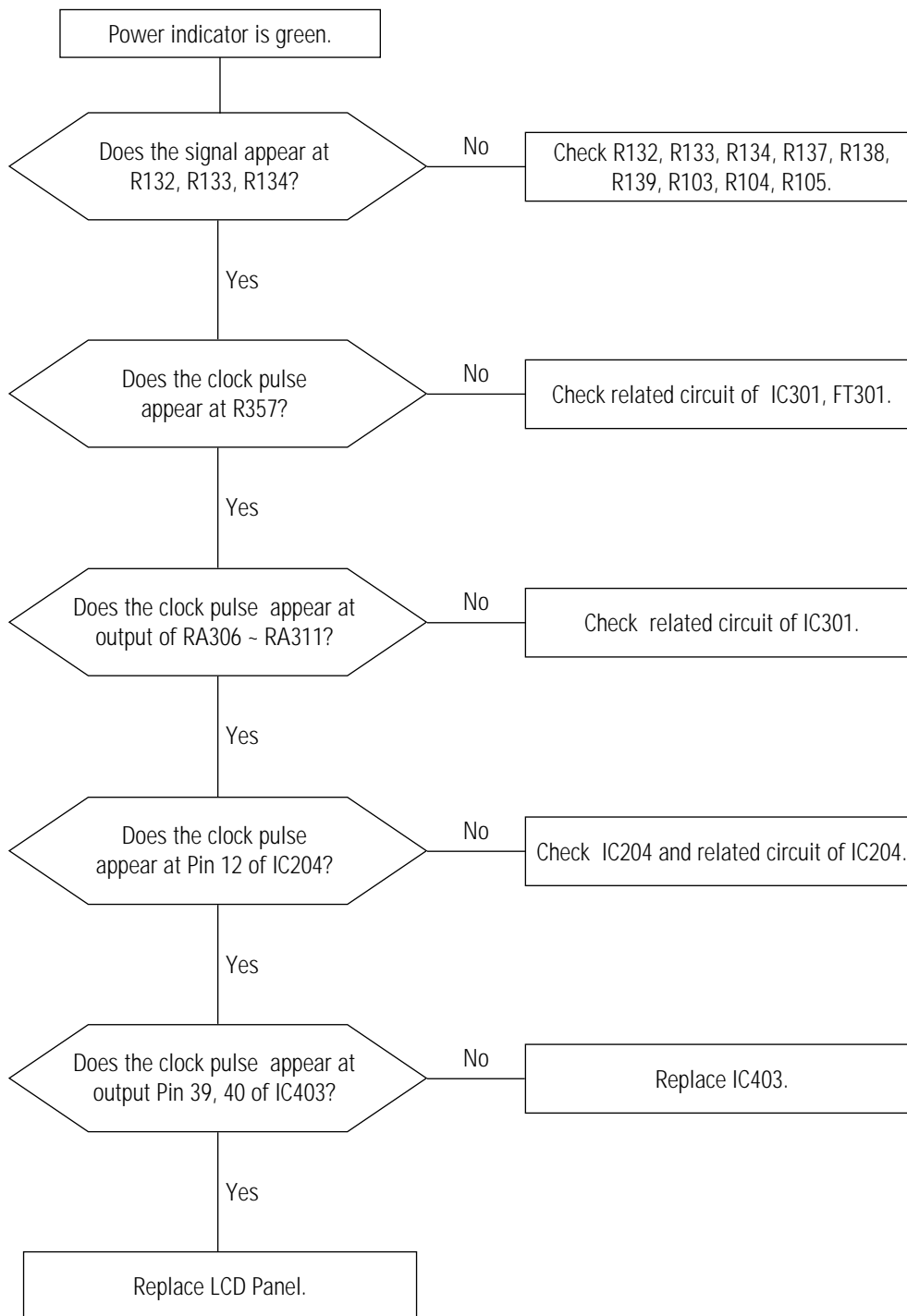
## 7-2 Others

Loc. No.	Code No.	Description	Specification	Remarks
-	BN90-00246A	ASSY COVER FRONT	GD15NS,-,-,-,-	SNA
C/F+C/R	6003-000275	SCREW-TAPTITE	BH,+B,M3,L10,BLK ,SWCH1018AK	SNA
C/F+P/BRKT	6003-000277	SCREW-TAPTITE	BH,+B,M3,L12,ZPC(YEL),SWRCH18	SNA
CIS	BN90-00239A	ASSY COVER FRONT	GD15NS,-,ABS+PC,IV16,-,-,-,-,TC095	SNA
CIS	6003-000010	SCREW-TAPTITE	BWH,+B,M3,L10,ZPC(YEL),SWRCH1	SNA
CIS	6003-000122	SCREW-TAPTITE	BH,+B,M4,L12,ZPC(YEL),SWRCH18	
CIS	6003-000277	SCREW-TAPTITE	BH,+B,M3,L12,ZPC(YEL),SWRCH18	SNA
CIS	BN59-00251A	BOARD-FUNCTION ASSY	GD15NS,-,-,FUNCTION ASSY,-,-,GIODANO	
CIS	BN59-00252A	BOARD-IR ASSY	GD15NS,-,-,IR ASSY,-,-,GIODANO	
CIS	BN64-00004A	KNOB-VOLUME	RN15AS,ABS,-,-,-,HB,IV16,-,-	
CIS	BN64-00011A	KNOB-POWER	ML15NS,ABS,-,-,-,HB,CLR(METALLIC SPRAY),,-	SNA
CIS	BN67-00005A	LENS-POWER	ACRYL,TRANSPARENT,ML15NS	SNA
CIS	BN67-00006A	LENS-SIGNAL	ACRYL,TRANSPARENT,ML15NS	SNA
CIS	BN68-00035A	MANUAL-SERVICE	T85A/T85D,IBM,ENGLISH,W/W,MOJO100G,-,216X280,SERVICE	SNA
CIS	BN72-00058A	COVER FRONT	ML15NS,ABS+PC,5V,IV16,T3.0,-	SNA
CIS	BN75-00066A	UNIT/COVER-GRILL	ML15NS,ABS+PC 5V,-,BL18,-	
CIS	6003-000277	SCREW-TAPTITE	BH,+B,M3,L12,ZPC(YEL),SWRCH18	SNA
CIS	BN30-00002A	SPEAKER-UNIT	2W,8ohm,-,370Hz-74Hz,-	
CIS	BN30-00003A	SPEAKER-UNIT	2W,8ohm,-,370Hz,-	
CIS	BN72-00060A	COVER GRILL	ML15NS,ABS+PC,5V,BL18,T3.0,-	
-	BN90-00250A	ASSY STAND	GD15NS,-,-,-,-	SNA
CIS	BN90-00240A	ASSY STAND	GD15NS,-,ABS+PC,5V,-,-,-,-,-	SNA
CIS	6002-000126	SCREW-TAPPING	FH,+2S,M3,L10,ZPC(BLK),SM20C	SNA
CIS	6003-000122	SCREW-TAPTITE	BH,+B,M4,L12,ZPC(YEL),SWRCH18	
CIS	6003-000301	SCREW-TAPTITE	BH,+S,M4,L6,ZPC(YEL),SWRCH18A	SNA
CIS	BH61-00001C	SPRING-CS	ML15NS,STS304-WPB,-,6.5/3.2,10,10,-,0.5,-,-,-	SNA
CIS	BH61-00001D	SPRING-CS	ML15NS,STS304-WPB,-,ID8.7,L10,L10,OD9.9,-,NTR,-,-	SNA
CIS	BH63-30103B	FELT-STAND	ML17L,WOOL,T1,W4,L40,-,TWOP,-	SNA
CIS	BN61-00012A	FOOT-BASE	RN15AS,PORON,D13.5,BLACK,T2.0,-,-	SNA
CIS	BN61-00025A	HINGE-ASSY/RIGHT	ML15NS,SUS304,T2,-,-,-,-,-	SNA
CIS	BN61-00026A	HINGE-ASSY/LEFT	ML15NS,SUS304,T2,-,-,-,-,-	SNA
CIS	BN64-00012A	KNOB-TILT	ML15NS,ABS+PC,-,-,-,-,5V,BL18,-,-	SNA
CIS	BN70-00082A	FRAME STAND-WIRE	ML15NS,HSW3,-,PI 5.0,-,-,-,-,-	SNA
CIS	BN71-00004A	FRAME STAND-BOTTOM	ML15NS,AL 12S,T2.5,BL18 SPRAY,-	SNA
CIS	BN72-00063A	HOLDER-WIRE/F	ML15NS,ABS+PC,5V,BK07,T2.0,-	
CIS	BN72-00064A	HOLDER-WIRE/R	ML15NS,ABS+PC,5V,BK07,T2.0,-	
CIS	BN72-00080A	STAND TOP	ML15NS,ABS+PC,5V,BL18,T2.5,-	SNA
CIS	BN72-00134A	COVER SPEAKER-REAR/R	ML15AS/NS(MFM100),ABS,IV16,-,-,HB,-,IV16,NONE,1.5	
-	BN91-00305A	ASSY MISC-ADAPTOR	CS15MOA	SNA
CIS	BN44-00058A	ADAPTOR	PSCV420106A(AD-4214N,GH17PS ,100 TO 240 VAC,47 - 63 HZ,+14VDC,3A,-,42W,AC-DC,0 T	
-	BN91-00311A	ASSY LCD	GD15NS,-,-,-,-	SNA
CIS	BN07-00045A	LCD	LTM150XH-L01,CZB,8BIT,331.6*254.76*12.5,16.19M,-,0.297*0.297,-,-,AMLCD/1 LVDS,-	
-	BN91-00312A	ASSY CHASSIS	GD15NS,-,-,-,-	
CIS	BN90-00259A	ASSY PANEL	GD15NS,-,SECC T0.8,-,-,-,-,-	
CIS	BN90-00260A	ASSY BRAKECT	GD15NS,-,SECC T0.8,-,-,-,-,-	SNA

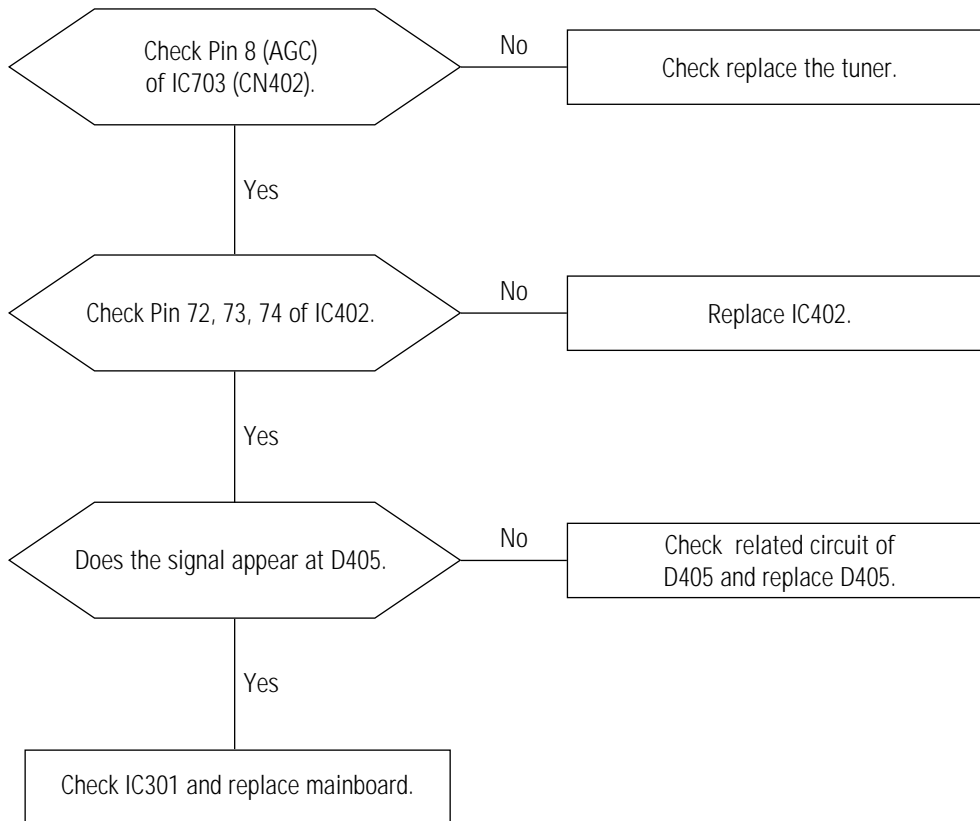
Memo

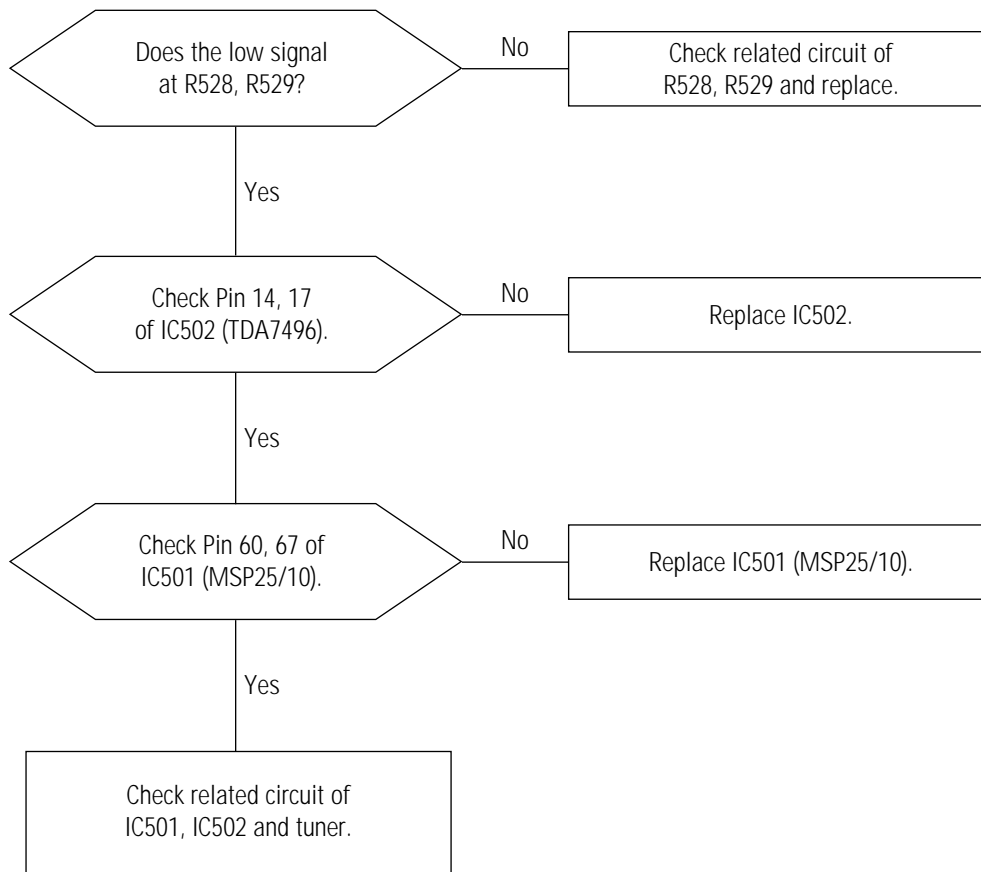
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## 5-2 No Video (PC Signal)





**5-3 No Picture (TV, Video 1, Video 2)**

**5-4 No Sound**

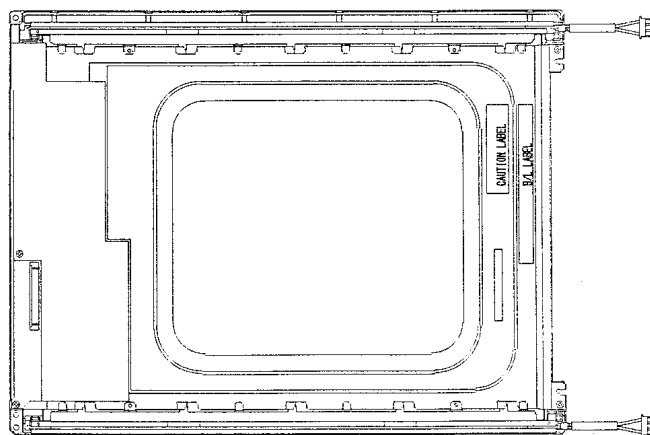
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4. Remove the Stand Rear from the Stand assembly.
5. Remove the Stand Front from the Stand assembly.
6. Remove the Neck Rear from the Stand assembly.
7. Remove the 4 Rubbers on the four corner of the Stand Bottom and the 4 screws on the four corner of the Stand Bottom.
8. Remove the 5 stopper hinges from the Bracket Bottom.
9. Remove the Stand Base from the Stand Assembly.

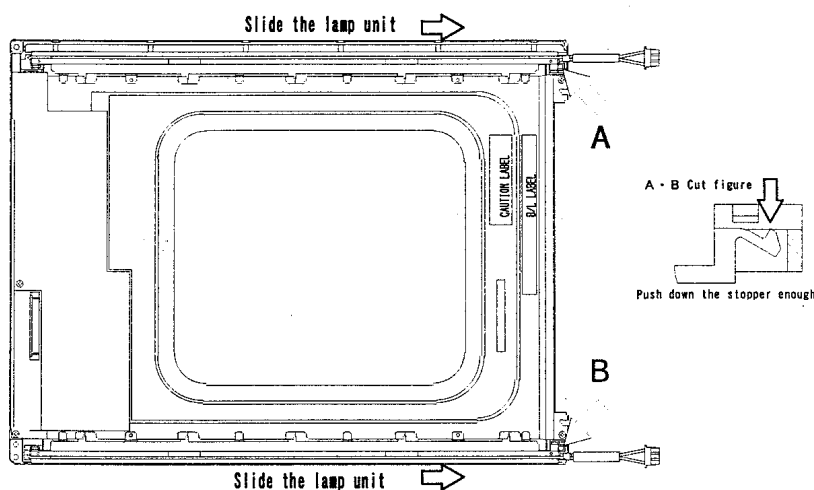
### 3-1-6 Wire frame stand Disassembly (option)

1. Carefully pull the cover hinge.
2. Remove the cover vesa from the Stand assembly.
3. Remove 4 screws on the assembly Bracket assembly.

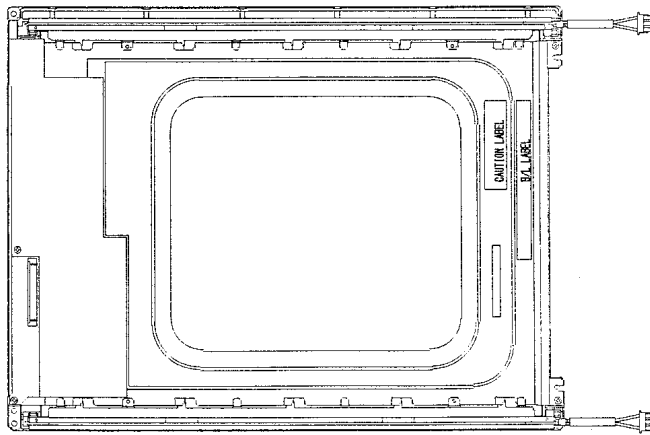
## 3-2 Replacement Order of Lamp Assemblies



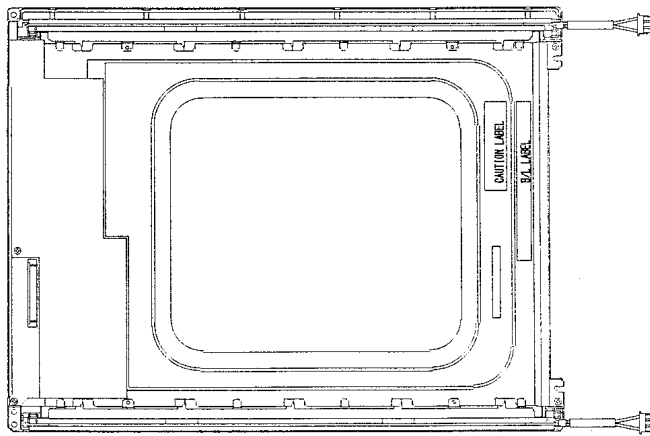
1. After confirm there is nothing on the desk  
Turn the LCD module over and put it on a flat desk set to the ground.



2. Push down the stopper and slide the lamp unit.



3. Please take out the lamp units from the LCD module.



4. Please fix the new lamp units on the LCD module :  
opposite process 2 and 3

\* Replacement of lamp unit should be done at the power off state and recommended clean bench condition.

### 3-3 Reassembly

---

Reassembly procedures are in the reverse order of Disassembly procedures.

Memo

## 2-2 Pin Assignments

Pin No.	Sync Type	15-Pin Signal Cable Connector		
		Separate	Composite	Sync-on-green
1		Red	Red	Red
2		Green	Green	Green + H/V Sync
3		Blue	Blue	Blue
4		GND	GND	GND
5		GND (DDC Return)	GND (DDC Return)	GND (DDC Return)
6		GND-Red	GND-Red	GND-Red
7		GND-Green	GND-Green	GND-Green
8		GND-Blue	GND-Blue	GND-Blue
9		No Connection	No Connection	Not Used
10		GND-Sync/Self Test	GND-Sync/Self Test	GND-Sync/Self Test
11		GND	GND	GND
12		DDC Data	DDC Data	DDC Data
13		Horizontal sync	H/V-Sync	Not Used
14		Vertical sync	Not Used	Not Used
15		DDC Clock	DDC Clock	DDC Clock

## 2-3 Timing Chart

This section of the service manual describes the timing that the computer industry recognizes as standard for computer-generated video signals.

Table 2-1 Timing Chart

Timing No. Originator Mode Name Resolution (HxV)	1 IBM VGA1 640x350	2 IBM VGA2 720x400	3 IBM VGA3 640x480	11 VESA 640/72Hz 640x480	17 VESA 640/75Hz 640x480
<b>HORIZONTAL</b>					
Frequency	31.469kHz	31.469kHz	31.469kHz	37.861kHz	37.500kHz
Total time	31.778μs	31.777μs	31.778μs	26.413μs	26.667μs
Active time	26.058μs	26.058μs	26.058μs	20.825μs	20.317μs
Blank time	5.720μs	5.720μs	5.720μs	5.588μs	6.350μs
Border (L / R)	0.318μs	0.318μs	0.318μs	0.254μs	0.000μs
Data time	25.422μs	25.422μs	25.422μs	20.317μs	20.317μs
Front porch	0.318μs	0.318μs	0.318μs	0.508μs	0.508μs
Sync. width	3.813μs	3.813μs	3.813μs	1.270μs	2.032μs
Back porch	1.589μs	1.589μs	1.589μs	3.810μs	3.810μs
Sync. polarity	Positive	Negative	Negative	Negative	Negative
<b>VERTICAL</b>					
Frequency	70.086Hz	70.087Hz	59.940Hz	72.809Hz	75.000Hz
Total time	14.268ms	14.268ms	16.683ms	13.735ms	13.333ms
Active time	11.504ms	13.155ms	15.761ms	13.100ms	12.800ms
Blank time	2.764ms	1.113ms	0.922ms	0.635ms	0.533ms
Border (T / B)	0.191ms	0.222ms	0.254ms	0.211ms	0.000ms
Data time	11.122ms	12.711ms	15.253ms	12.678ms	12.800ms
Front porch	0.985ms	0.191ms	0.064ms	0.026ms	0.027ms
Sync. width	0.064ms	0.064ms	0.064ms	0.079ms	0.080ms
Back porch	1.716ms	0.858ms	0.794ms	0.528ms	0.427ms
Sync. polarity	Negative	Positive	Negative	Negative	Negative
Dot Clock	25.175MHz	28.322MHz	25.175MHz	31.500MHz	31.500MHz
Sync. Type	Separate	Separate	Separate	Separate	Separate
Scan Type	N/I	N/I	N/I	N/I	N/I

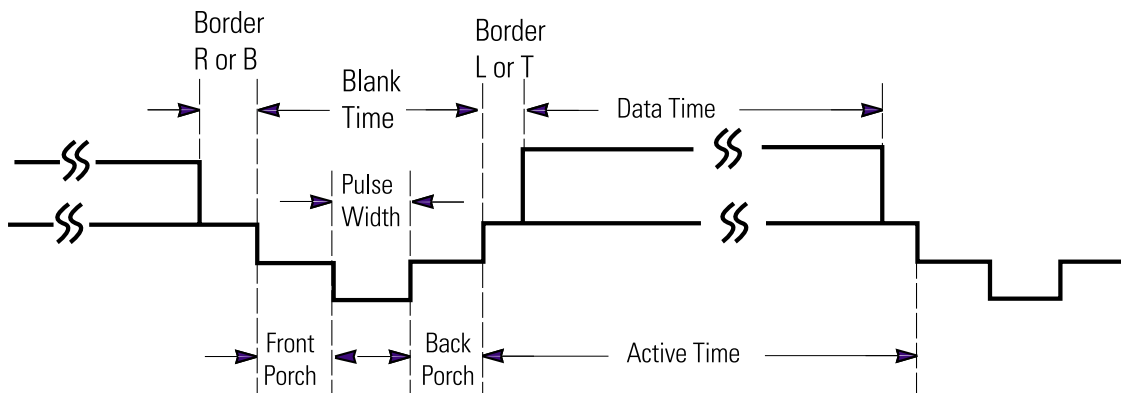


Table 2-1 Timing Chart (Continued)

Timing No. Originator Mode Name Resolution (HxV)	12 VESA 800/56Hz 800x600	13 VESA 800/60Hz 800x600	14 VESA 800/72Hz 800x600	18 VESA 800/75Hz 800x600	16 VESA 1024/70Hz 1024x768
<b>HORIZONTAL</b>					
Frequency	35.156kHz	37.879kHz	48.077kHz	46.875kHz	56.476kHz
Total time	28.444μs	26.400μs	20.800μs	21.333μs	17.707μs
Active time	22.222μs	20.000μs	16.000μs	16.162μs	13.653μs
Blank time	6.222μs	6.400μs	4.800μs	5.171μs	4.054μs
Border (L / R)	0.000μs	0.000μs	0.000μs	0.000μs	0.000μs
Data time	22.222μs	20.000μs	16.000μs	16.162μs	13.653μs
Front porch	0.667μs	1.000μs	1.120μs	0.323μs	0.320μs
Sync. width	2.000μs	3.200μs	2.400μs	1.616μs	1.813μs
Back porch	3.556μs	2.200μs	1.280μs	3.232μs	1.920μs
Sync. polarity	Positive or Negative	Positive	Positive	Positive	Negative
<b>VERTICAL</b>					
Frequency	56.250Hz	60.317Hz	72.188Hz	75.000Hz	70.069Hz
Total time	17.778ms	16.579ms	13.853ms	13.333ms	14.272ms
Active time	17.067ms	15.840ms	12.480ms	12.800ms	13.599ms
Blank time	0.711ms	0.739ms	1.373ms	0.533ms	0.673ms
Border (T / B)	0.000ms	0.000ms	0.000ms	0.000ms	0.000ms
Data time	17.067ms	15.840ms	12.480ms	12.800ms	13.599ms
Front porch	0.028ms	0.026ms	0.770ms	0.021ms	0.053ms
Sync. width	0.057ms	0.106ms	0.125ms	0.064ms	0.106ms
Back porch	0.626ms	0.607ms	0.478ms	0.448ms	0.513ms
Sync. polarity	Positive or Negative	Positive	Positive	Positive	Negative
Dot Clock	36.000MHz	40.000MHz	50.000MHz	49.500MHz	75.000MHz
Sync. Type	Separate	Separate	Separate	Separate	Separate
Scan Type	N/I	N/I	N/I	N/I	N/I

Table 2-1 Timing Chart (Continued)

Timing No. Originator Mode Name Resolution (HxV)	19 VESA 1024/75Hz 1024x768	32 MAC 640/67Hz 640x480	33 MAC 832/75Hz 832x624
<b>HORIZONTAL</b>			
Frequency	60.023kHz	35.000kHz	49.726kHz
Total time	16.660μs	28.571μs	20.110μs
Active time	13.003μs	21.164μs	14.524μs
Blank time	3.657μs	7.407μs	5.586μs
Border (L / R)	0.000μs	0.000μs	0.000μs
Data time	13.003μs	21.164μs	14.524μs
Front porch	0.203μs	2.116μs	0.559μs
Sync. width	1.219μs	2.116μs	1.117μs
Back porch	2.235μs	3.175μs	3.910μs
Sync. polarity	Positive	Negative	Negative
<b>VERTICAL</b>			
Frequency	75.029Hz	66.667Hz	74.551Hz
Total time	13.328ms	15.000ms	13.414ms
Active time	12.795ms	13.714ms	12.549ms
Blank time	0.533ms	1.286ms	0.865ms
Border (T / B)	0.000ms	0.000ms	0.000ms
Data time	12.795ms	13.714ms	12.549ms
Front porch	0.017ms	0.086ms	0.020ms
Sync. width	0.050ms	0.086ms	0.060ms
Back porch	0.466ms	1.114ms	0.784ms
Sync. polarity	Positive	Negative	Negative
Dot Clock	78.750MHz	30.240MHz	57.284MHz
Sync. Type	Separate	Separate Composite Sync.-on-G	Separate Composite Sync.-on-G
Scan Type	N/I	N/I	N/I



Memo

## 1-2 Servicing Precautions

**WARNING:** An electrolytic capacitor installed with the wrong polarity might explode.

**Caution:** Before servicing units covered by this service manual, read and follow the Safety Precautions section of this manual.

**Note:** If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions.

### 1-2-1 General Servicing Precautions

1. Always unplug the unit's AC power cord from the AC power source and disconnect the DC Power Jack before attempting to:
  - (a) remove or reinstall any component or assembly,
  - (b) disconnect PCB plugs or connectors, (c) connect a test component in parallel with an electrolytic capacitor.
2. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
3. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the area around the serviced part has not been damaged.
4. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
5. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500 V) to the blades of the AC plug.  
The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
6. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

## 1-3 Electrostatically Sensitive Devices (ESD) Precautions

Some semiconductor (solid state) devices can be easily damaged by static electricity. Such components are commonly called Electrostatically Sensitive Devices (ESD). Examples of typical ESD devices are integrated circuits and some field-effect transistors. The following techniques will reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. To avoid a shock hazard, be sure to remove the wrist strap before applying power to the monitor.
2. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.
3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.
4. Use only a grounded-tip soldering iron to solder or desolder ESDs.
5. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
7. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.  
**Caution:** Be sure no power is applied to the chassis or circuit and observe all other safety precautions.
8. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting your foot from a carpeted floor can generate enough static electricity to damage an ESD.



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